The Iron Age

A Review of the Hardware, Iron and Metal Trades.

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Combined Steam Engine and Fire Pump.

We take from a recent issue of the London *Engineer* the annexed engravings of an ingenious combination of steam engine and fire-pump, the apparatus, moreover, being also applicable to the driving of dynamos for electric-lighting purposes. The engine was constructed by Messrs. Shand, Mason & Co., of London, England, for a Continental firm, and, in view of the fact that it embodies some entirely new features, the appended particulars, taken from our contemporary, will be read with interest :

The engine is of the return connecting rod description, with two piston-rods attached to the cross-head, the latter being fitted with adjustable slipper blocks with large bearing surfaces. The connecting-rod is jointed to the center of this cross-head, and a screwed projection is formed for the purpose of connecting the outer end of the pump piston-rod by means of a nut when the engine is to be used as a fire-pump. It will be seen from the engravings that the bed-plate is of great strength, while the steam cylinder is overhung at one end and the fire-pump at the other. The general arrangement of the valve-gear is of novel design, the cut-off is automatic, and directly under the control of a governor of the Hartnell type, with several improvements. The main valve is of the ordinary description, driven by an eccentric, with the cut-off valve working at the back and at right angles to its line of motion. The cut-off valve has several narrow ports through it corresponding with similar ports on the back of the main valve, the stroke being short and the frictional resistance correspondingly decreased. The cut-off valve-rod is connected at the upper end by links to one end of a rocking lever, to the other end of which is coupled the rod of the cut-off eccentric, this latter having a pin forged on to it with a bearing in the governor drum ; the eccentric vibrates on this pin to the position for early and late cut-off. This pin has a lever keyed on its outer end, as shown, and to this lever is attached a rod from an eccentric forged on a pin, on which is keyed one of the arms of the governor, this arm being connected by a link on which is the governor spring. This arrangement gives the governor complete control over the cut-off eccentric, while the latter has no power to affect the position of the governor arms. With the engine running at 250 revolutions per minute, the extreme variation of the speed was under 12 revolutions, although in the experiment the cut-off was varied in its full range from $\frac{1}{12}$ to $\frac{5}{8}$ of the stroke. Self-acting lubricators are fitted to all working parts, the surfaces at the same time being made extra large, with the revolving parts balanced.

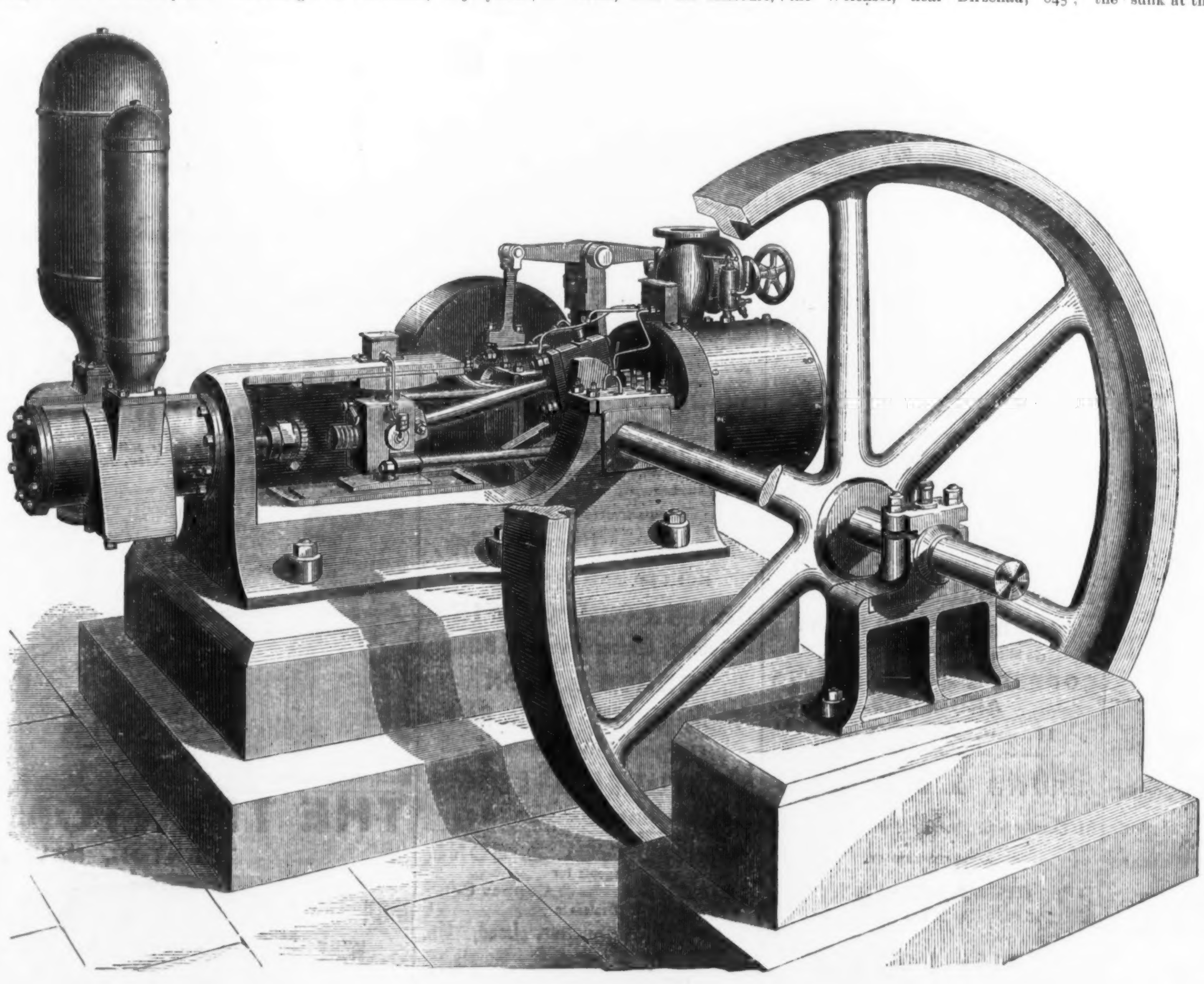

Fig. 1.—Side Elevation.

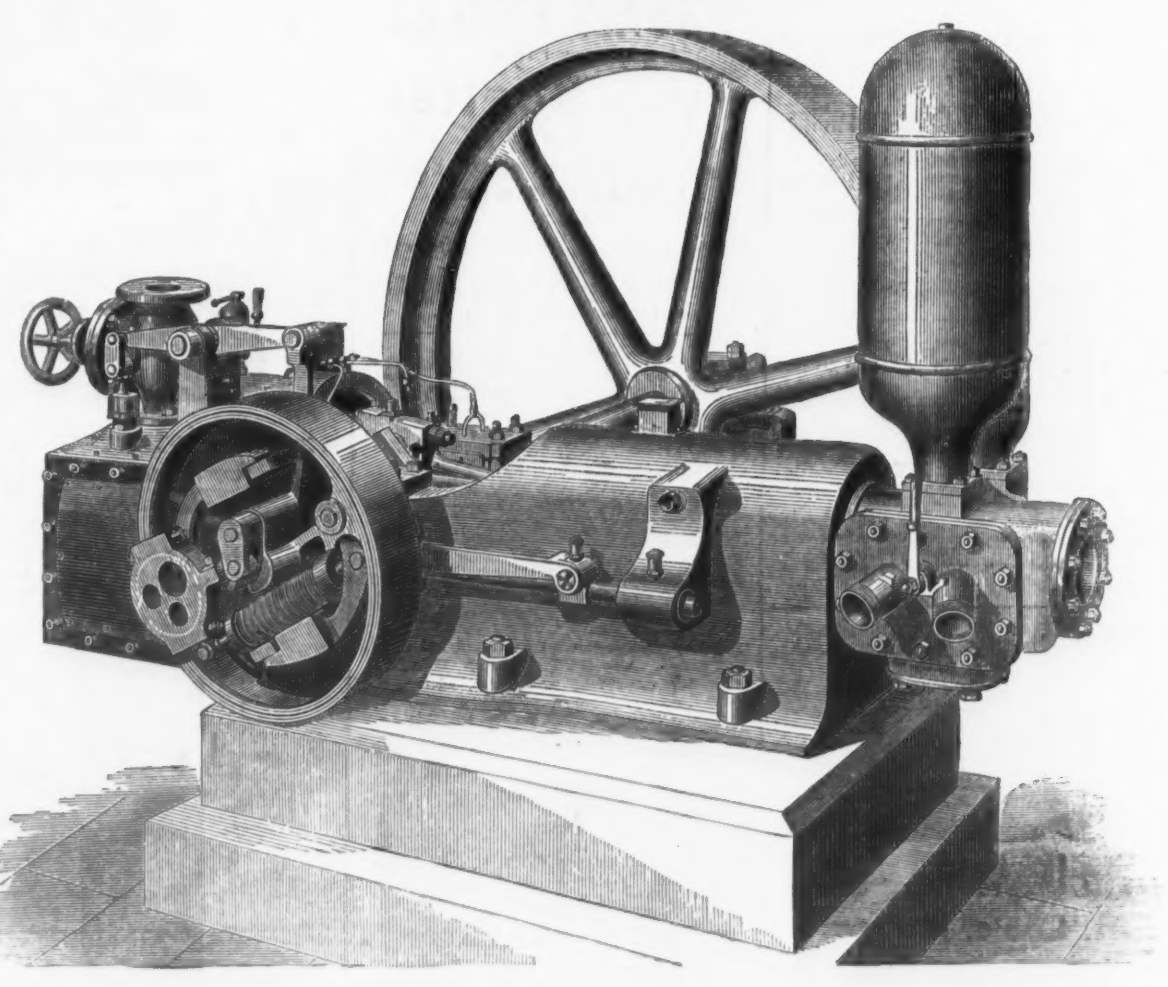

Fig. 2.—Elevation Showing Automatic Cut-Off Gear.

COMBINED STEAM ENGINE AND FIRE PUMP.

Angle Bars and Nut Locks.

The *Railway World* reports that at the late meeting of the National Road Masters' Association in St. Paul, a number of road masters participated in a discussion upon rail joints, fastenings and nut locks. Mr. Moll, of the Chicago, Milwaukee and St. Paul, considered angle bars much stronger than fish bars, but thought that fish-bar joints made a smoother track, as angle bars, after they have been long in use, allow the rail ends to sag. Angle bars, varying from 20 inches to 2 feet in length, are used by the Chicago, Milwaukee and St. Paul. The president of the association remarked that he had received a letter stating that at a test made by the Pennsylvania Railroad officials a fish joint broke on the imposition of a 48,000-pound strain, and an angle bar endured up to 76,000 pounds. Mr. Moll then repeated his conviction that angle bars were stronger than fish bars, and expressed himself in favor of the Verona lock nut. Mr. Adamson, of the Ohio and Mississippi, habitually employed angle bars with ties under the joint, and preferred vulcanized fiber nut locks, having known them to remain intact after two years' service. The great requisite, in his judgment, was that the nut locks must not be suffered to get damp before being put in place. Mr. Moran, of the Illinois Central, was partial to angle plates and Verona locks. Mr. Cox, of the Chicago, St. Paul, Minneapolis and Omaha, spoke in favor of angle bars and Verona nut locks. Mr. Hayward, of the Kansas City, St. Joseph and Council Bluffs, gave angle bars the preference after a prolonged test. He had known Pratt locks to endure very well for about six years, at the end of which time they were worthless. Harvey grip bolts and grip locks have been used by his road with excellent results, some of the former being in good condition after seven years' trial. Verona locks have been in use for three years. According to Mr. Brennan, the St. Paul, Minneapolis and Manitoba, after a four-years' experiment with fish joints, has adopted angle bars. This road uses no nut locks, except for experimental purposes. Other members who spoke upon the same subject expressed different views.

Railway Viaducts.—A list has recently been compiled of the length of principal railway viaducts in the world, the figures of which are as follows : Parkesburgh, U. S., 2150 yards ; St. Louis, over the Missouri, 1993 ; Louisville, over the Ohio, 1635 ; across the East River, 1520 ; and the same for the Delaware at Philadelphia and for the Victoria Bridge over the St. Lawrence ; the Volga bridge, near Syssian, 1495 ; the Moerdyk bridge, Holland, 1490 ; Pongabuda (India), 1148 ; the Dniester bridge, near Kiew, 1090 ; over the Rhine at Maintz, 1038 ; the Dnieper at Pultowa, 980 ; the Mississippi, at Quincy, 980 ; the Missouri, at Omaha, 860 ; across the Weichsel, near Dirschau, 845 ; the Danube, near Stadlan, 775 ; the Po, near Mezzana-Corti, 765 ; the Tamar, at Saltash, 673 ; the Mississippi at Dubuque, 542 ; the Gorai (India), 535 ; the Britannia bridge, 480 ; over the Saane at Frieburg, 392 ; across the Theiss at Szegedin, 365.

Mississippi River Improvements.

According to an account from Memphis, the largest mattress yet made was recently sunk at the Government works above Hopefiled. The river's bank there had cracked, caved in, and sloughed off until the elevator was in great danger ; but from the thick deposit of earth that had been heaped upon the sunken mattresses many young willows had sprung up and made the new ground firm and compact. A steamer took a party up to see the large mattress sunk. Its length was 1032 feet ; its width, 145 feet. It was spread out on the water and when first seen seemed to be a mere mass of floating vegetation, but on close inspection it was seen to be a double layer of willow poles woven together and dotted over with blocks of stone. A boat was moored at the north end and another at the south end of the mattress to hold it in position. Several piles of stone were on a barge, and at a signal the laborers at each pile began to throw the stones upon the mattress, which had already been weighted with 250 square yards of stone. The mooring ropes were gradually slackened as one end of the mattress sank under the accumulating weight, and when it disappeared beneath the surface two long barges loaded with stone were floated over it. Then their load of stone was emptied on the mattress, and at the expiration of two hours all the moorings, except those that held it to the shore, were loosened. It then settled to the bottom. The bank slopes at a sharp angle, making the depth of the water about 50 feet. This mattress is to be covered with earth, and willows planted will make a firm bank that will resist the river. High water interfered with the work last year, and only two mats were sunk in November and December last. In all, 5200 feet of mattress has been sunk, at a cost of $13 a foot. The stone is brought at considerable cost from the Ohio River. The force now employed can make from 100 to 125 feet of mattress a day. The appropriation for the work is $325,000. It will insure Memphis against a cut-off that might make her an insular city.

The Mississippi River Convention, which has just finished its session in Vicksburg, will meet again in the city of Washington in January next, and will make the improvement of the Mississippi a measure by itself, independent of the River and Harbor bill. Dikes are needed to protect the bottom lands up and down the river—lands whose products are destroyed to the extent of millions of dollars by the semi-annual overflow. The convention will ask for $10,000,000.

Silver Coinage.—Director of the Mint Burchard has prepared a statement showing the amount of silver accumulated at the coinage mints for coinage into silver dollars under the act of 1878, with the disposition made of the same, and showing also the profits on the coinage of silver dollars from the beginning of the fiscal year on which he became Director of the Mint—1878—up to the 30th of June, 1883. From this statement it appears that the silver on hand on July 1, 1878, and purchased since then, is 123,447,480 ounces, of which 119,206,224 ounces have been used in the coinage of silver dollars and some subsidiary silver coin ; 304,375 ounces have been wasted by the operative officers of the mints and sold in sweepings, leaving a balance on hand July 1, 1883, of 3,936,880 ounces. This remainder has been weighed and verified by officers of the Treasury Department. The profits on the coinage of this silver, including the repayments by the Adams Express Company, amount to $17,342,113, of which sum $15,581,713 have been deposited in the Treasury of the United States ; $358,399 have been paid for shipping silver dollars, $51,925 for loss on sweepings sold, $71,429 for wastages and $48 for loss on recoinage, leaving a balance in the coinage mints on June 30, 1883, of $1,278,596, all of which has since that date been covered into the Treasury.

The *American Manufacturer* for the 5th instant says : "It is a curious fact that 40 locomotives were exported from the United States to Germany in 1878, and none since. It is possible they were intended for some other country." The Baldwin Locomotive Works could throw a great deal of light on this subject, as we believe they built 40 locomotives for Russia in the year named, and these locomotives were landed and put in running order at a German port, possibly Stettin, whence they proceeded by rail to their destination.

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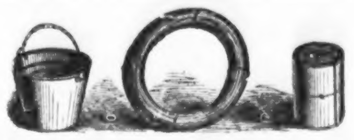

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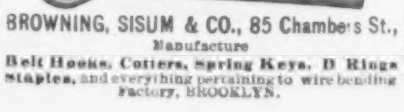

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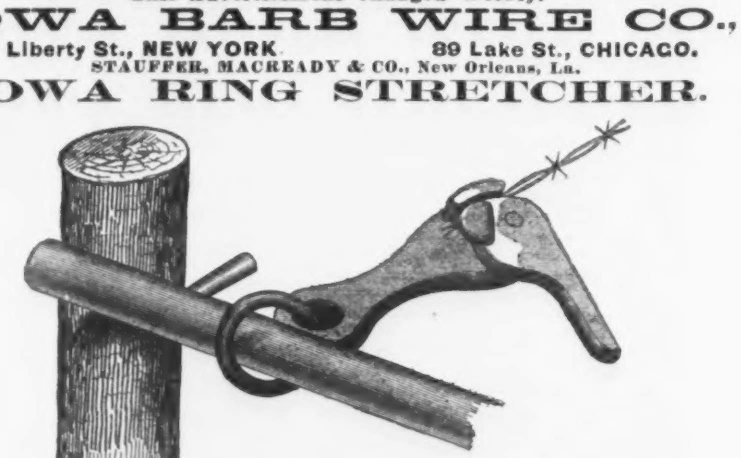

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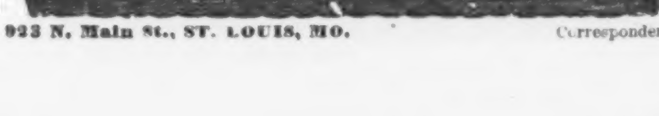

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The Lead Industry of the United States.*

BY C. KIRCHHOFF, JR.

Lead mining in the United States is an industry of considerable age. At times during the first half of the present century work was conducted in different localities in the Eastern and Southern States, without, however, ever affording the basis of a steady and sustained occupation. For a long period the output of the mines of Missouri and of the upper Mississippi region constituted the bulk of the make of our country, and during the period between 1840 and 1848 it became so heavy that considerable quantities of the metal were exported, the maximum being reached in 1844, when 8223 tons went abroad. In 1850 the tide set in in the other direction, nearly 16,000 tons being imported, and this movement continued for many years, until a growing home production, made possible by the connection of the mining regions of the Rocky Mountains by railroad with the Atlantic and Pacific coasts, crowded out the foreign lead. On the whole, as a glance at the following table of the production of lead for a long series of years will prove, there has been a steady increase, especially during the past decade, in spite of some sharp fluctuations in values. The figures from 1825 to 1853 are those published by Whitney; those for the later years have been collected by Mr. Edward A. Caswell, of New York City, who has personally undertaken the task of gathering annually the statistics of production since 1873 with a sagacity and painstaking care which has caused them to be accepted as authoritative by the trade.

Production of Lead in the United States.

	Net tons.		Net tons.
1825	1,500	1856	16,000
1830	8,000	1857	15,800
1831	7,500	1858	15,300
1832	10,000	1859	16,400
1833	11,000	1860	15,600
1834	12,000	1861	14,100
1835	13,000	1862	14,200
1836	15,000	1863	14,800
1837	13,500	1864	15,300
1838	15,000	1865	14,700
1839	17,500	1866	16,100
1840	17,000	1867	15,200
1841	20,500	1868	16,400
1842	24,000	1869	17,500
1843	25,000	1870	17,830
1844	26,000	1871	20,000
1845	30,000	1872	25,880
1846	28,000	1873	42,540
1847	28,000	1874	52,080
1848	25,000	1875	59,640
1849	23,500	1876	64,070
1850	22,000	1877	81,900
1851	18,500	1878	91,060
1852	15,700	1879	92,780
1853	16,800	1880	97,825
1854	16,500	1881	117,085
1855	15,800	1882	132,890

The supply of lead has, however, not varied as widely as the statistics of production would seem to indicate. The increase in the make in this country steadily crowded out of the market the large quantities of foreign metal which previous to 1872 constituted the principal source of supply. With the exception of the year 1880, the bulk of the pig lead imported during recent years has been re-exported under the operation of the drawback clause, being chiefly used in the manufacture of solder for tin cans for exporting petroleum and canned fruits and vegetables.

LEAD-PRODUCING REGIONS OF THE UNITED STATES.

Utah.—During the years 1871 to 1874 considerable quantities of Utah ores were shipped for treatment, the local smelting industry meanwhile developing very rapidly. In 1870 local desilverizing and refining works (those of the Germania Company) were started, but they suspended that part of their operations in 1875, to resume again in 1878. The production was from 5000 tons in 1871 to 30,000 tons in 1882. The most prominent mine to-day is the Horn Silver, which in 1881 made 8171 tons of base bullion, increased in 1882 to 16,002 tons. The study of the reports of this mine is one of particular interest, because it reveals the different items of cost entering into the production of lead when working on a very large scale. The cost of mining, of course, fluctuates within wide limits, according to the character of the deposit and many local conditions. The Horn Silver produced 47,232 tons of ore, at a cost of $4.44 per ton; the smelting at Francklyn costing $14.73, and the refining at Chicago $9.05. The ore carried on an average 37.8 per cent. of lead and 34.2 ounces of silver, the loss in smelting being 9.71 per cent. of the lead and 2.10 per cent. of the silver. The average of the grade of the base bullion produced in Utah was 93 ounces per ton, or, deducting allowance for silver to disilverizing works (5 ounces), 88 ounces per ton, having a value of $95 per ton at New York, with silver at $1.08 per ounce. Even if the average cost of mining, smelting and desilverizing be very much higher in the average of Utah mines, the silver alone yields enough to pay a very heavy tribute to the railroads for freight, thus leaving a large percentage of the amounts realized for the lead as a profit. In the case of the Horn Silver Company, the dividends during 1882 amounted to $1,200,000, while the net receipts from the sale of lead were $1,326,664.23, thus indicating that the silver paid for nearly the entire cost of extraction, treatment, administration and marketing. This does not, of course, apply to all the Utah mines, but it furnishes a striking illustration of the advantages which the presence of silver in their ores gives to the producers of the Rocky Mountain States and Territories over the miners of non-argentiferous lead ores.

Nevada.—The climax in the production in Nevada was reached in 1878, as will be noted from the following table, giving the yield during the past six years:

Production of Lead in Nevada since 1877.

	Net tons.		Net tons.
1877	19,724	1880	16,159
1878	31,063	1881	12,826
1879	22,805	1882	8,590

Almost the entire product has come from the Eureka district, in which the two principal mines are the Richmond, worked by an English corporation, and the Eureka, owned by a San Francisco company. The ore occurs in large chambers, and the mines have therefore periods of great prosperity,

* From advance sheets of the Annual Report of the Division of Mineral Statistics and Technology, U. S. Geological Survey. Albert Williams, Jr., Chief of Department.

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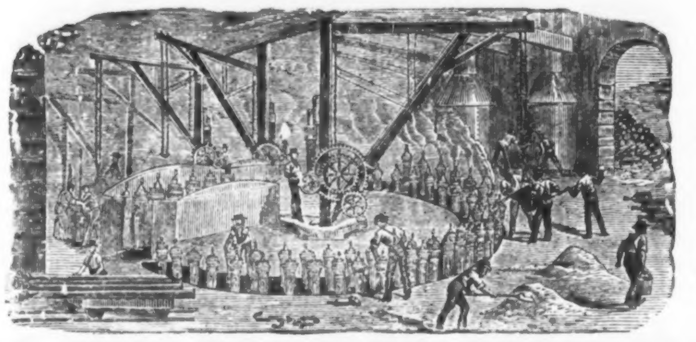

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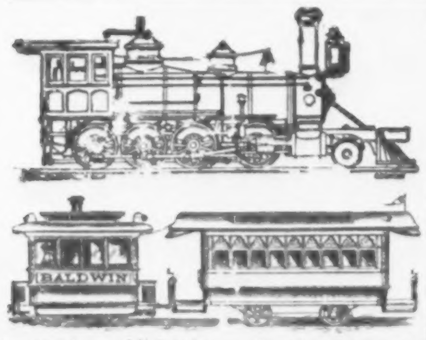

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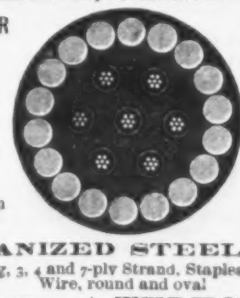

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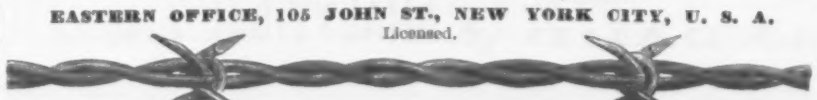

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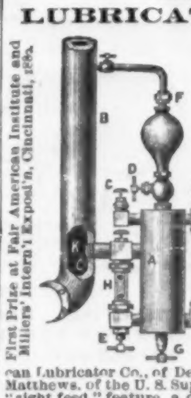

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alternating with others when extensive development and prospecting work must be carried on. Recently the Richmond has drawn heavily upon its reserves without opening out new ore bodies. The company has, however, carried heavy stocks of metal, which have been placed on the market gradually. It has followed the policy of selling its lead in large blocks, and has therefore during the past few years exercised an influence upon our markets out of proportion to its product, as compared with that of the whole country. The Richmond lead, being refined at Eureka, has usually been placed in the East, while the base bullion turned out by the Eureka Company goes to San Francisco for desilverizing and refining, the greater part of it, therefore, finding a market on the Pacific coast.

Colorado.—The latest important addition to the ranks of the lead-producing localities of the country, and now by far the heaviest contributor to the lead supplies, is Colorado. Previous to 1878 Colorado possessed only a few isolated smelting plants, yielding only insignificant quantities of lead, until the development of the carbonate deposits of Leadville and tributary camps carried it to the front in a few years.

The production in 1882 amounted to some 58,642 tons. The returns of one works are believed by good authorities to be excessive, and 55,000 tons is assumed as the most probable actual total. The enormous increase during the past four years is exclusively due to Leadville.

It is almost impossible, in view of the great fluctuations in the cost of mining at the different mines and the variations in the prices paid for ores, fuel and transportation, to arrive at an estimate of the cost of production of the lead. Leadville smelters compete very sharply for ores, and pay greater or less prices, according to their character as an aid in fluxing. Nothing but a minute examination into what are strictly private affairs would admit even of a general estimate. The smelters pay for the silver in the ore, deducting 5 per cent., or less in some cases, and return from 25 to 43 cents per unit for the lead, instances being known where as low as 1 per cent. has been accounted for. In addition to this, a smelting charge of $7 to $12 is deducted from the gross value. The ores are, as a general thing, low in lead, carrying only from 10 to 20 per cent., while the smelting charges range from 8 to 12 per cent. in that metal. Higher percentages are the exception. The cost of smelting averages from $10 to $12, the loss in lead being 15 to 16 per cent., and the loss in silver 3 per cent. The smelting industry has been developed to a high degree of perfection, and with a fair fuel (El Moro or Crested Butte, Colorado, coke), which costs, delivered at Leadville, about $13 per ton, the expense of smelting has been brought down to a low figure. The sharp competition between the smelters in Leadville, in Pueblo and in Denver keeps prices for ores high. These circumstances all contribute to a heavy production. They have done much to build up mining in Red Cliff and other camps tributary to Leadville, and with the enormous developments of the mines of that section, and an activity stimulated by the wonderful success of some mining ventures, it is likely that for some years to come the present rate of output will be maintained.

Montana.—During the past few years Montana has produced increasing quantities of lead. In different sections of the Territory large bodies of low-grade ores are known to exist, and very elaborate, though misdirected, efforts have been made in one or two instances to work them. In other cases careful management has been rewarded with ample success—the Hecla Company, of Glendale, which produced 2600 tons of lead in 1882, yielding a good profit to its owners. A number of deposits are known to exist in different parts of Montana, and many of them have been worked at different times with more or less success. It is probable that the advent of the Northern Pacific Railroad will do much to stimulate this industry and place Montana in a position to contribute more largely to the supply of the country. The production in 1882 is estimated at 4100 net tons.

Idaho.—The greatest share of interest during the past few years has been absorbed by the promise of important developments in the Wood River country and adjacent regions. Numerous and large deposits of ore high in lead and in silver have been opened, and a number of smelters have been built; but until the spring of 1883 the lack of proper shipping facilities has held the district back. Since it has been tapped by a branch railroad, production will probably be considerably stimulated. The ores, being largely galena, carry heavy amounts of lead, and a comparatively small number of smelting plants will be able to turn out large quantities of metal. It is estimated that in 1882 the product of Idaho was 5000 tons of lead, of which the bulk, however, was shipped as ore to Utah and elsewhere, appearing in the product of the localities to which it was shipped. Competent authorities look forward to a notable increase in the lead output of Idaho in 1883.

Missouri, Kansas, Illinois and Wisconsin.—Southwestern Missouri and Southeastern Kansas have become the seat of a very important lead mining and smelting industry, closely identified with the zinc mining. The Joplin district, which was opened out in 1871, and the younger producing sections in Kansas, support a number of large smelting works. In Missouri and Kansas the output rose from 13,433 tons in 1873 to 22,625 tons in 1879. During the same period the output of the Galena district, embracing the production of Illinois and Wisconsin, decreased from 6550 to 2500. A considerable portion of the lead production is made by a few large smelting companies, among which the Desloge, St. Joe, Mine la Motte, and Lone Elm are the principal ones. There are, besides, a large number of small producers, their scattered yield being heavy in the aggregate. The mines of Missouri, in spite of frequent predictions that they would be crowded out by the competition of the silver lead mines of the Rocky Mountains, have held their own remarkably well. It is believed that the majority of the larger producers are capable of laying down their lead at St. Louis at a cost varying between 3 and 3.50 cents per pound.

Other Sources.—Lead has been produced in minor quantities in almost all of the other States and Territories of the Far West, though never in quantity to appear as a factor in the markets of the country. In New Mexico and Arizona a number of deposits of lead ores have been opened. They are rich in lead, though generally poor in silver, but steps are being taken in different places to smelt these ores, using the lead as a carrier for silver. The smelters buy high-grade refractory silver ores, and smelt them together with their poor lead ores, a rich base bullion being produced in fair quantities in some instances. Argentiferous lead ores are found in many portions of California, especially in Mono, Inyo and neighboring counties, but the State can hardly yet be numbered among the regular producers.

LEAD METALLURGICAL WORKS.

The lead-refining and desilvering business has developed into magnificent proportions. The only two mining companies which do their own refining are the Richmond, having works at Eureka, Nev., and the Horn Silver, which has a plant at Chicago. In addition to these, there are the Selby Works, at San Francisco; the Germania Works, at Salt Lake City, Utah; the Pueblo Works, at Pueblo, Col.; the Omaha, Kansas City, Aurora (Ill.), the St. Louis, Chicago and Pittsburgh works; the works of Balbach & Sons, at Newark, N. J.; the Delaware Lead Works, at Philadelphia; the Manhattan and the Crooke works at New York. In addition to these 15 establishments, a new plant is building at Nathrop, Chaffee County, Col., by the Nathrop Refining Company. All but the Richmond Company use the Parkes desilvering process, or slight modifications of it. The tendency during the past few years has been to lessen the supplies of bullion to Eastern refiners; two of them are idle, while the others run only at a fraction of their capacity.

REVIEW OF THE LEAD MARKET.

The history of the markets of lead has been influenced during the past decade chiefly by the rapid and steady increase in the production, notably in those sections where lead is a carrier for the precious metals. The increase in the facilities for the transportation of fuel and supplies and the shipment of the product from the Rocky Mountain States and Territories; the improvements introduced in smelting and refining; the skill with which these metallurgical operations are carried out—all these circumstances have combined to cheapen the cost of reduction, or, what amounts to the same thing, to enable lower grades of ores to be treated with a profit. This is an important fact, the significance of which will be readily understood by all who have had experience in mining. It emancipates the industry from many of the vicissitudes incident to the working of all ore deposits. It gives to districts where large areas of ore-bearing grounds are worked a steadiness in the production, where formerly there were violent fluctuations between intense activity and total idleness. The growth of the railway system in the Rocky Mountains has had the further effect of concentrating smelting operations—at the same time opening a market for ores for purposes of mixture which could not be treated alone. It is to be expected that in the future, as in the past, new districts will rapidly assume a commanding position as competitors, and others which for many years have played a leading part will sink into insignificance; still, these fluctuations in the supply will not have so telling an effect, because it is not so dependent upon high grades. There is much new territory known to be promising to open out, and therefore absolutely no prospect of a serious or sustained falling off in the production. On the contrary, there are evidences that the very heavy output of the present time will be eclipsed in the near future, and the belief is frequently expressed that overproduction at an early day will force us once more to become exporters of lead. These views are based upon an exaggerated opinion as to the output and a misapprehension of the business in the country, growing out of recent changes. In the past the bulk of the lead made in the West and in the Rocky Mountains came to the Atlantic coast to be desilverized, refined and manufactured into pipe, shot or sheet lead, or corroded. Much of this manufactured lead was shipped back westward until refineries, mills, and corroding plants began to spring into existence along the lines of travel in the West, tapping the stream of crude and refined lead for local consumption. Thus the Western trade was gradually but steadily wrenched out of the hands of the Eastern manufacturers, in spite of their magnificently appointed plants and large capital, and of late they have been attacked in their own home markets. The consequence has been a striking falling off in the business, or an absence of any increase in proportion to the general expansion of consumption throughout the country. The result has been that the Eastern trade and those connected with it have generally taken too gloomy a view of the future, and the heavy amounts of lead absorbed by the West, in spite of the dull business in the East, have repeatedly been a subject of surprise. To the lead producing and consuming interest in general these changes can only be welcome. Ultimately they tend to stimulate consumption. The movement, it appears, has been encouraged by Western railroad companies, which naturally prefer to build up a local industry, with all the advantages in fixing population and stimulating local traffic, this being more remunerative than a share only in low through rates to Eastern cities. This has been most significantly shown in the gradual transfer of the lead-desilverizing industry from Eastern to Western points. It is charged that the railroads discriminate against Eastern refiners, and, while this charge has never been proved, the diversion of business and the evident advantages it possesses make it probable that the bulk of the lead-desilverizing business has been permanently removed Westward. With this shifting of the center of the lead trade, St. Louis and Chicago have gained much as leading markets and points of distribution. An important point to be considered in connection with the American lead trade, as contrasted with that of Europe, is that here the metal is almost exclusively consumed in the form of manufactures and white-lead, while

abroad important quantities are always required for armament purposes. On the other hand, town and village water service is by far more general in this country than elsewhere, while white-lead is used in enormous quantities. The great bulk of the lead produced in this country is disposed of in the open market, though a different policy is pursued by different producers. There has always been a speculative element in the trade, and, as a very large share of the product goes into the hands of a comparatively limited number of manufacturers, the contending influences in the market are generally strong. The course of the market from 1875 to 1883 has been as follows:

1875.—The fluctuations during the year were:

Price of Lead in 1875.—Cents per Pound.

Months.	Highest.	Lowest.
January	6.20	6.00
February	5.90	5.85
March	5.75	5.62
April	5.87	5.80
May	5.95	5.90
June	5.90	5.75
July	6.00	5.95
August	5.95	5.87
September	5.87	5.70
October	5.65	5.60
November	5.87	5.65
December	5.95	5.87

Occasional speculative purchases in the middle of March and toward the close of June, at the lowest figures noted in the tables for those months, prevented any heavy fluctuations. By thus making the supplies at intervals, strong parties were able to distribute them at fairly remunerative prices in spite of a steady growing production. This, however, was counterbalanced by a falling off in imports, due to the stiffness in the foreign markets created by Government purchases for warlike purposes. By care in working, American refiners were beginning to free us from dependence upon Europe for corroding lead. Then the collapse of the Carlist movement made an increase in the Spanish output feasible. The business of manufacturers in this country during the year was not active, and during the greater part of that time they maintained an attitude of expectancy.

1876.—Values underwent but little fluctuation during the year, as the following summary shows:

Price of Lead in 1876.—Cents per Pound.

Months.	Highest.	Lowest.
January	(a) 6.00	5.87
February	6.37	6.00
March	6.50	6.40
April	6.40	6.12
May	6.50	6.10
June	6.50	6.25
July	6.35	6.20
August	6.37	6.25
September	6.25	6.00
October	6.00	5.80
November	5.80	5.70
December	5.70	(a) 5.65

a Gold.

Business during the first months of the year was quiet and dull, the moderate supplies available being firmly held. The market gradually weakened, until in May a surplus (chiefly of Richmond lead) was cleared away by some heavy sales. A good demand abroad, largely for armament purposes, kept prices so high there that very little foreign metal could enter this market, which, however, was so amply supplied by home production that toward the end of the year prices slowly fell off again. The sales of Government lead, which had for years been a leading feature in our markets, were practically closed out during 1876. Freight rates from St. Louis, the market for Missouri and much desilverized lead, fluctuated considerably, going as low as 23 cents and as high as 54 cents per 100 pounds.

1877.—The range of prices during the year 1877 is particularly interesting, because it reflects the beginning of a movement which culminated later:

Price of Lead in 1877.—Cents per Pound.

Months.	Highest.	Lowest.
January	(a) 6.15	6.12
February	6.40	6.20
March	6.75	6.50
April	6.50	6.25
May	6.00	5.55
June	5.70	5.60
July	5.60	5.37
August	5.12	4.90
September	4.85	4.75
October	4.35	4.25
November	4.75	4.50
December	4.60	4.50

a Currency.

Under the pressure of a heavy production, chiefly in Utah and in Nevada, this year was, on the whole, one of a heavy decline. In the first months of the year an effort was made by a speculative movement in the Western markets to hold the metal high, but consumers did all within their power to struggle against the maintenance of artificial figures, and the pressure of lead shipped from San Francisco led to a break in May, which was the beginning of a decline hastened by the selling out of their holdings by the speculative element. In September the export point had nearly been reached in San Francisco, but it was not until October that the large consumers, tempted by low offerings, and somewhat frightened by the signs of heavy speculative purchases, took hold at 4.25 and 4 30. The concentration of the stock forced small buyers to pay more during the balance of the year, the market being very quiet.

1878.—The year 1878 was remarkable for the low prices reached.

Price of Lead in 1878.—Cents per Pound.

Months.	Highest.	Lowest.
January	4.35	4.00
February	3.87	3.65
March	3.87	3.62
April	3.75	3.50
May	3.50	3.25
June	3.50	3.12
July	3.62	3.25
August	3.50	3.20
September	3.45	3.25
October	3.60	3.37
November	3.95	3.60
December	4.00	3.90

The year opened with a heavy stock, accumulated during the winter months, during which consumers had been working off former purchases, and had bought but little in consequence. Instead of drawing upon the stocks as usual during the winter months, when production was generally less than the demand, the output outstripped the consumption. Matters were taking so serious a turn, in spite of the often repeated assertions that the Rocky Mountain producers would soon cease to work, that at the suggestion of the Missouri interests a meeting of leading lead miners and smelters throughout the country was held at St. Louis in March. The members of the American Pig Lead Association, then formed, agreed to bind themselves not to sell lead at a price less than 4 cents delivered in New York. The effort proved a complete failure, and lead fell steadily until 3⅛ cents was reached in June. Then the falling off in the production of Utah and the shipment of surplus supplies of Nevada lead to China began to strengthen the position somewhat, though consumers showed little confidence. The rumors of the extraordinary development in Leadville caused uneasiness, though the reports coming from there were generally accepted with reserve. Toward the end of the year the market gradually got into better shape, and ruled firm after strong parties had obtained control through a speculative concentration of the stock.

1879.—Prices varied as follows:

Price of Lead in 1879.—Cents per Pound.

Months.	Highest.	Lowest.
January	4.50	4.00
February	4.50	4.50
March	4.50	3.25
April	3.25	2.87
May	3.12	2.87
June	3.80	3.12
July	4.10	3.90
August	4.05	4.00
September	4.00	3.75
October	5.50	4.00
November	5.62	5.00
December	5.60	5.50

January and February dragged along with quotations almost entirely nominal, consumers holding off obstinately, while holders insisted that low prices had so much curtailed consumption as to seriously diminish the supply. So far as Utah and Nevada were concerned, this was undoubtedly the case, but the falling off there was fully compensated by the constant and rapid increase at Leadville. Under the pressure of heavy receipts, the market declined heavily in March and April, and in May reached the lowest figure ever touched—2⅞ cents. Speculative purchases and buying on the part of consumers gradually forced prices upward, and when, in the autumn of 1879, the great "boom" period set in, it carried lead along with it until a high price was reached in December, when importations of foreign lead again became profitable. The year will always remain one of the most memorable in the lead trade of the country, as having witnessed its deepest depression and one of its most sudden revivals. That the majority of the Western and Missouri mines could not for any length of time, at the rates of labor and freights then ruling, stand the strain of prices as low as 3 cents in New York, is beyond all doubt; but the decline taught economies and the necessity of improved methods, which have not been lost upon producers.

1880.—Transactions during the year were based on prices varying between the following monthly extremes:

Price of Lead in 1880—Cents per Pound.

Months.	Highest.	Lowest.
January	6.10	5.50
February	6.00	5.87
March	5.95	5.30
April	5.75	5.40
May	5.25	4 40
June	4.75	4.50
July	4.75	4.25
August	5.00	4.30
September	4.90	4-80
October	4.87	4.65
November	4.85	4.75
December	4.75	4.25

The rise begun in the fall of 1879 continued during the first months of 1880, but its limit was set by the fact that foreign lead began to appear freely upon our market, and a steady decline of quotations there, together with a rapid receding of the speculative excitement here, leading to the sale of lots held by speculators, forced prices down gradually, until in August the market was cleared and heavy sales were made at advancing figures. In October a large block of Richmond lead was taken, but the winter demand proving a diappoinment, quotations slowly fell off toward the close of the year.

1881.—Prices fluctuated within the extremes in the following table:

Price of Lead in 1881.—Cents per Pound.

Months.	Highest.	Lowest.
January	5.00	4.80
February	5.10	4.80
March	4.85	4.62
April	4.85	4.37
May	4.70	4.25
June	4.50	4.25
July	4.90	4.50
August	4.95	4.75
September	5.37	4.95
October	5.25	4.87
November	5.25	4.90
December	5.25	5.00

Repeated heavy purchases kept values fairly steady during the first four months of the year, and after prices had declined in May large lots were taken out of the market in June, July and August. They were sustained by a fairly active demand, fully capable of coping with an increased production. The chief cause of this improvement was the great activity in the building trades in all parts of the country, that being by far the most important channel for manufactured lead and for white lead.

1882.—Prices of lead fluctuated as follows during the year:

Price of Lead in 1882—Cents per Pound.

Months.	Highest.	Lowest.
January	5.15	4.95
February	5.20	5.09
March	5.12	4.85
April	5.00	4.90
May	4.85	4.60
June	4.90	4.55
July	5.15	4.90
August	5.10	4.95
September	5.15	4.95
October	5.15	4.87
November	4.90	4.50
December	4.75	4.50

During the year a good demand, with the aid of strong parties, sustained the metal fairly, in spite of a very heavy production. In January the market opened with signs of growing weakness, the pressure coming chiefly from the West, and being aided by the fact that a large block of Richmond lead was to be placed on the market. In February 2000 tons of Richmond lead was sold at 5 cents, and a better feeling prevailed for a time. But the urgency of representatives of foreign lead in endeavoring to gain a foothold caused a weakening, which changed to a temporary standstill when it became known that the Richmond Company had succeeded in making arrangements to ship a portion of its heavy stock at Eureka via New Orleans. In April that company again placed 3000 tons at 4.85, but after a temporary spurt the market again fell off until it reached 4.55 in the beginning of June. It rallied during the month, and in July the Richmond Company succeeded in marketing an additional lot of 5000 tons at 4.92½, the bulk of it be-

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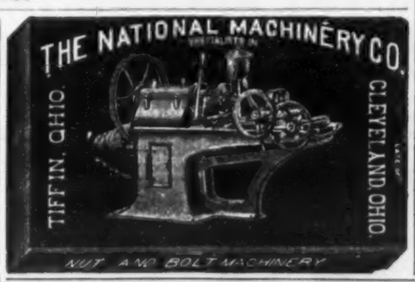

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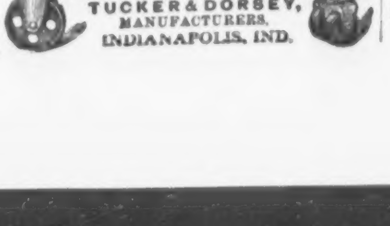

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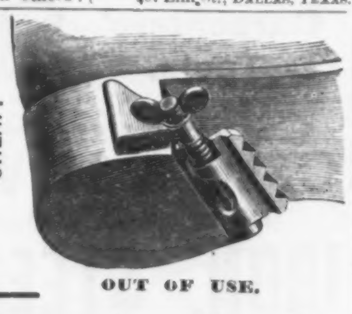

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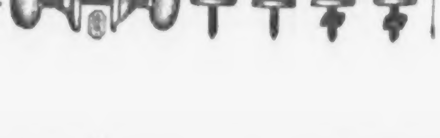

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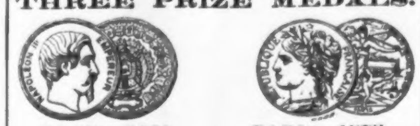

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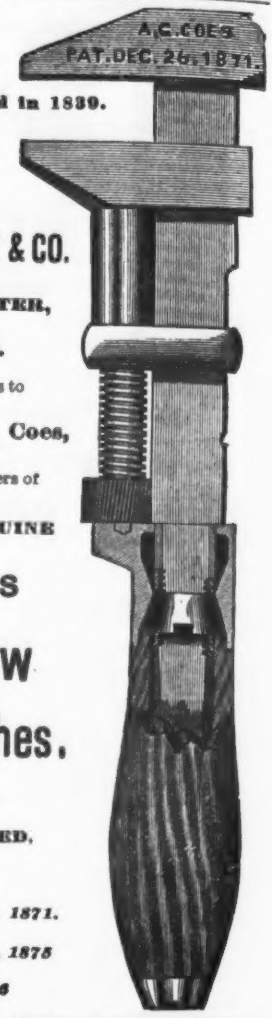

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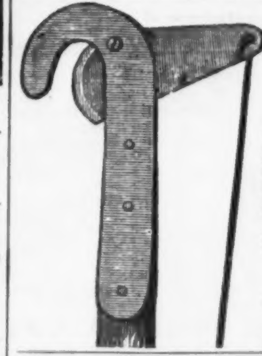

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ing taken on speculative account. Simultaneously the large consumers took a great quantity in the aggregate, and small buyers were forced to cover their requirements of jobbing lots at higher figures. In October and November, however, the market again weakened, until some round sales cleared away the surplus and warranted better figures.

1883.—During the first six months of the present year quototions have moved within the following monthly range:

Price of Lead in the First Six Months of 1883.—*Cents per Pound.*

Months.	Highest.	Lowest.
January	4.70	4.60
February	4.60	4.50
March	4.65	4.50
April	4.62	4.40
May	4.55	4.40
June	4.45	4.40

Opening quietly, though with some firmness, notably in the West, until in the beginning of the month of March about 3000 tons were taken, principally by the trade, an effort to depress prices being made later in the month by additional sales at lower prices. April passed quietly, while May opened with the placing of about 3000 tons among consumers on the part of the representatives of two large works. Buyers were thus tolerably well supplied, especially as the demand for manufactures during the first quarter of the year was very light. The result has been an accumulation of supplies, which is looked upon with solicitude by many, though the principal blocks of stock are held by strong parties. It is argued that with production going on at an unabated rate, while the consumption (notably in the East) has very materially fallen off, values cannot be maintained for any length of time at their present figure.

LEAD IN FOREIGN COUNTRIES.

The practical cessation of imports of lead from foreign countries renders the development of the mining industry abroad comparatively unimportant to home producers, at least at the present time, though past experience has taught that in times of excessive production here we must be prepared to compete at least in the markets of the East, while in periods of extraordinary advances in values here a check is put upon the rise by free offerings of foreign lead. This part of the subject will be passed over lightly.

Great Britain.—The statistics of the lead trade of Great Britain are of particular interest, because they show the growing weakness of the English producers, who are struggling with difficulty against foreign competitors and the variations in the imports and exports. Formerly English desilverizing works handled the bulk of the argentiferous lead produced in Spain, but the fostering of local desilverizing works has diverted a large share of that business, and it seems only a question of time when London will cease to be the principal market for the lead produced in Spain, as efforts are being made to reach consumers direct. The principal customers of Great Britain are as follows:

Exports of Pig, Sheet and Pipe from Great Britain.

To	1879.	1880.	1881.
	Gross tons.		
Russia	10,487	7,318	8,355
Germany	1,171	1,063	1,041
France	3,3[illegible]4	2,417	3,390
United States	1,022	258	59[illegible]
China, &c	5,579	10,011	12,824
British India	3,[illegible]2	2,589	3,349
Australia	3,133	1,929	4,715
Other countries	8,418	7,966	8,[illegible]
Total	3[illegible],766	33,551	43,109

The most interesting figures in these columns to American producers are those relating to China, the total receipts of lead in that country being on an average 20,000 tons. England, it will be seen, generally furnishes fully one-half, the bulk of the remainder coming from Germany.

Spain.—The great rival of the United States as a lead producer is Spain, the principal seat of the mining industry being the Province of Murcia, on the southeastern coast. Very few data are available on which to base an estimate of the capacity of the Spanish mines to furnish lead cheaply, but the fact that production has steadily increased during the past few years, in spite of an almost uninterrupted fall in prices, proves that the establishment of better railway communication and the encouragement offered by the Government have carried the limit of profitable working downward. It has been repeatedly asserted of late that production in Spain would be seriously checked when certain minimum prices were reached, £13 in London being named last year. The prophets seem to have made their predictions without taking into account the compensating circumstances named. The exports from Spain during the past few years have been as follows:

Exports of Lead from Spain.

	Tons.		Tons.
1878	90,842	1882	116,132
1879	100,336	1883 (Jan., Feb. and March)	29,534
1880	92,400		
1881	105,809		

Germany.—Germany has a very ancient lead industry, the principal districts, in the order of their importance, being the Rhenish Provinces, Silesia, the Hartz Mountains, Nassau and Freiberg, Saxony. The latest figures available are those compiled by Herr Landsberg, giving the production of the various districts and works for the years 1881 and 1882. The production of silver from the same works is added. It has an important bearing on the question of the capacity of the works to resist foreign competition or meet the markets of the world:

Production of Lead (Metric Tons) and Silver (Kilograms) in Germany.

	Lead.		Silver.	
	1881.	1882.	1881.	1882.
Prussia:				
Stolberg Co.	13,996	14,919	20,227	26,130
Rhenish-Nassau Co.	7,200	6,239	6,212	7,608
Mechernich Co	22,400	25,055	4,438	5,108
Commern Co	2,362	2,727	1,181	988
A. Poensgen & Sons	3,189	3,100	1,382	1,175
Rothenbach Works	55	40	960	901
Walther Cronek Works	5,489	5,858	4,066	3,679
Friedrichs Works	8,450	8,683	5,532	5,245
Hanover:				
Upper Hartz	9,428	10,447	26,385	32,592
Lower Hartz	424	579	3,854	3,575
Nassau:				
Ems	5,772	5,803	6,887	7,408
Braubach	2,721	3,176	5,515	6,085
Saxony:				
Freiberg	4,494	5,064	39,133	50,985
Total	85,989	91,690	125,771	151,474

The works of the Hartz and of Freiberg are Government property, and even if in the course of events they should not prove able to compete, it is likely that they would be subsidized, to maintain a large resident population almost entirely dependent upon the working of the mines. The Stolberg Company are also manufacturers of spelter, and it is impossible from the reports submitted to arrive at a definite conclusion as to their possibility to meet much lower prices. The Mechernich, the largest works in the country, are fully able to cope with foreign competitors. During the year 1882 this company, the greatest single lead producer in the world, paid dividends amounting to 17 per cent. on the capital stock, besides providing amply for depreciation of plant and a reserve. Nearly one-half of the production of lead in Germany must seek foreign markets, as the following statistics of exports and imports, which the German legation at Washington has kindly furnished, show:

Imports of Lead and Manufactures of Lead into Germany.

	1879.	1880.	1881.	1882.
	Metric tons.			
Pig lead	4,019	2,616	2,658	1,973
Sheet lead	187	74	38	....
Manufactures of lead.	461	171	142	....
Total	4,667	2,861	2,838	....

Exports of Lead and Manufactures of Lead from Germany.

	1879.	1880.	1881.	1882.
	Metric tons.			
Pig lead	43,3[illegible]0	45,419	46,799	41,875
Sheet lead	840	1,206	1,303	....
Manufactures of lead.	1,652	2,289	2,163	....
Total	45,852	48,914	50,265	....

Other Foreign Sources.—No other countries are great producers of lead. Greece exported in 1881, 11,700 tons of lead. France has a small native industry, and, besides, deverizes and refines considerable quantities of base bullion from the Laurium mines of Greece. Austria, Russia and Italy produce comparatively small quantities. Outside of Europe and the United States, Mexico is the only country which does a lead-smelting business. What little Mexican base bullion is made for export goes to England now instead of to this country, as it did at one time; and this movement is restricted by the inaccessibility of the mines, so that the lead is usually cupelled on the spot, the silver alone reaching the markets. Thus far the development of the railroad system in that country has not yet sensibly affected the shipments of lead.

How to Prevent Smoke.

Professor Roberts, in discussing the smoke-abatement problem before a Parliamentary committee, said:

"M. Delezenne estimated in 1855 that the proportion of carbon that escaped combustion in this form might be taken at 5 per cent. of the total weight of fuel burned in the grate, and 6320 kg. of soot fell in 12 hours on the town of Lille. But, as Emile Burnat, quoting Payen, pointed out in a valuable paper on the combustion of smoke in boiler furnaces, the amount of finely-divided carbon produced in a certain lamp-black factory is only 3 per cent. of the coal burned, and therefore the amount of carbon in ordinary smoke must be much lower. In 1858 Mr. John Graham estimated that very black smoke does not contain more than $\frac{1}{16}$ per cent. of the carbon of the coal burned, and the accurate experiments of M. Schewrer-Kestner showed that in boiler furnaces the loss of carbon in the form of soot never exceeds 1 per cent. of the fuel burned, while the mean loss is probably between $\frac{1}{2}$ and $\frac{1}{4}$ per cent. A case, however, is recorded in which a coal containing 69 per cent. of carbon (burned with an inadequate supply of air) thus lost an amount of carbon as soot equal to 2.03 per cent. of the fuel burned. As might be anticipated, the amount of soot is greater in the case of an open fireplace than in a boiler furnace. But the evidence afforded by the results of the tests made at the exhibition, while possessing much interest, does not, unfortunately, render it possible to give a precise answer to the question, for the following reasons: Some of the soot must have been deposited in the flue before it reached the point at which the withdrawing tube was inserted, and there is reason to fear that in the withdrawal of flue-gas laden with soot, through any form of slit or orifice in a tube, the gaseous and solid portions may not enter into exactly the ratio in which they exist in the chimney. In many cases the flues were carefully swept before and after the trial, and the soot collected and weighed. In an extreme case, in an open fireplace, no less than $2\frac{1}{4}$ per cent. of soot, compared with the fuel burned, was found in the flue at the end of the trial. In the case of three close stoves of careful construction, rather less than $\frac{1}{2}$ per cent. was found, while in some cases it fell to $\frac{1}{4}$ per cent., and in one case to $\frac{1}{10}$ per cent. Of course, these numbers do not include the amount escaping into the air. I may perhaps add that in a preliminary experiment, made with an ordinary open fireplace, connected with a chimney by means of a sheet-iron pipe 6 feet long and 9 inches diameter, 17 pounds of bituminous coal were burned in three hours, and no less than .61 per cent. of the fuel burned was collected in the pipe in the form of soot, while the soot that passed into the chimney was not collected. This .61 per cent. of soot, after drying at 100° C., yielded, on distillation at 300° C., 12 per cent. of an oily, strong-melling mixture of hydrocarbons."

The Cleveland (England) steel works of Messrs. Bolckow, Vaughan & Co. were commenced in 1876 and began operations in 1877. They cover an area of 100 acres, and embrace 10 Bessemer converters, six of them of 15 tons capacity, and the other four of 8 tons. Both the acid and the basic Bessemer processes are employed, the quantity of steel made by both being about 5000 tons per week. The converters are elevated about 15 feet from the floor level. There are 12 Siemens furnaces for heating the ingots, each 25 feet long by 10 feet wide, and fitted with four doors. The ingots are charged into and drawn from the furnaces by hydraulic machinery. The cogging-mill has 39-inch and 49-inch, and the finishing-mill 30-inch, rolls. There are 42 steel boilers to

generate the necessary steam. Attached to the steel works are 19 blast furnaces, to 10 of which Cowper's stoves are attached.

The Quality of Sheffield Files.

Mr. S. Uttley, a prominent delegate to the late Trades Congress, has written the following letter to the Sheffield *Independent*. Mr. Uttley is especially well informed on the subject of Sheffield files, and he tells some plain truths which our readers will find interesting:

To the Editor: I had not the least idea that when I brought forward in the Congress my resolution on "goods' qualities," and not, as you had it, "Sheffield goods," that it would lead many persons to conclude that I had some special animus against Sheffield manufacturers. Had my speech been fully reported, it would have been seen that I referred to other places and branches of trade besides Sheffield; but as you have seen fit to take up the question and give it a special application to Sheffield, I may be pardoned if I take up a little of your space in going into a matter of such vital importance. I must thank you for your very able article on the question. In one part of your article you state that it is said to be no uncommon thing for files either partially or wholly cut by machinery to be inclosed in wrappers and labeled "hand-cut," and imply your conviction that I am the custodian of some definite knowledge on this point, and you appear rather anxious that I should come down upon the culprits. If I adopt a similar plan to the reverend gentlemen referred to in your article, kindly look out for the hands going up, while I give a few illustrations of the manner in which those deceptions are practiced which have come under my own notice and are indisputable. In doing so I shall withhold names, for this reason—that in this progressive and enlightened age the truth requires protection, while a lie, if it is sufficiently fortunate in being supported by position and capital, can stalk forth unblushingly and unchallenged, at any rate for a time sufficiently long to have inflicted terrible injury upon society.

Some few months ago the wrapper of a case of half a dozen files attracted my attention in consequence of its having attached to it a label having printed upon it these words: "All our files cut by hand," while at the same time I knew perfectly well that the house in question were very largely employing machinery in the cutting of their files. I need scarcely say that I became the possessor of that printed evidence of the integrity (commercial) of one of the largest firms in the town. Further, one day, some months ago, a commercial traveler, well known in this district, called upon me. He had with him a sample of files which had been forwarded to him from abroad, in order that he might obtain the opinion of a practical man upon them. They had been purchased at a good market price from a large firm in Sheffield, whose reputation had been earned by the employment of good steel and the best workmanship for years, but who at the present are quite up to the times in both speculation and honesty (commercial, of course). The purchasers had noticed that for the past few years the cost of files had assumed undue proportions, and, like wise men, decided to find out the cause; consequently the gentleman's visit to me. Upon examination, only two out of the entire sample were found to be hand-cut, all the rest being entirely cut by machinery. Now, these files had been purchased in full confidence that, by paying a fair price and dealing with a good house, they were sure of getting a good and reliable article. I venture to say the house in question will never receive another line from that quarter, no matter how they might lower their prices.

In another case the Government are requiring certain tools. They solicit quotations for hand-produced ones; a certain firm secure part of the order at a very low price, and, being up to the times, supply a class of goods not according to contract, and which prevent them from securing, according to their own statement, a repetition of the order. except they were prepared to conform strictly to the terms of the contract, which they could not possibly do. "Serve them right," you say. So say I; but, unfortunately, the matter does not end there. They had cut the prices down so low that those who are prepared to deal honestly, and give good value for their money, are either disgusted with the whole affair and will not tender, or, if they do, in order to make a profit, are compelled to use inferior steel, and employ cheap, and, consequently, inefficient labor. In this way these orders, which ought to be a source of profit to both manufacturers and workmen, are but a source of annoyance and vexation, and even when we take into account the 7½ or 10 per cent. reduction in price, the Government does not obtain as good value as it ought to and would do providing it paid a better price. Government is deceived, the town discredited and every one dissatisfied, except possibly the few who have put money into their pockets for the time being by deceit

And this brings me to the question of steel in files. If inferior steel be used in the manufacture of a file, it is an impossibility for the workman, be he ever so skillful, to produce a really good and serviceable tool, besides inflicting upon the cutter especially a very great injustice. Just one case in point. Only the other day one of our most skillful workmen had given him to cut one dozen of mill-saw files. They had the appearance of being properly annealed, but when he came to attempt to cut them he found that his chisels, which were made of the very best steel he could procure, and were in good condition, would not face, and instead of some four chisels doing the work, it took no less than 20, and occupied him four times the length of time it ought to have done, and when done the files were not worth carriage. When we remember that there is no allowance for tools, and the work is done by piece, you will see the terrible injustice done to the workman as well as to the consumer. I have dwelt more particularly upon files because they properly belong to my department, but it is a well-known fact that tons of cast metal and cheap steel table blades, scissors, &c., to say nothing of Bessemer steel edge tools and blades, are branded with our Sheffield name, and frequently with the names of houses which have been built up by honest adherence to principles, and if a commission was appointed where all who gave evidence on these points were given protection, in my opinion some of the most astounding revelations would be forthcoming as to the tricks of trade.

As regards ourselves (the file-cutters), all that we ask for is that all files shall go forth branded what they really are—if machine cut, as such; if partially cut by machinery, specify it; and if cut by hand, the same. In doing this we are only asking for our rights as citizens, for it is a notorious fact that not one out of the many who use machinery in the cutting of their files honestly and openly admit the same by labeling and marking them machine cut. In conclusion, allow me to take the liberty of suggesting, for the consideration of the honorable Cutlers' Company, who are, or ought to be, the custodians of Sheffield's honor, a few means by which good and useful work might be done by them:

1. By searching out and exposing all deception in manufactures as in days of yore.

2. By encouraging the training of competent and thoroughly practical workmen for the most responsible position of managers. This to my mind is one of the most important questions of the day, seeing that the present race of manufacturers are many of them not as well versed in the details of business as were their fathers, and a knowledge of French and German will not avail except it be backed up by efficient management at home.

3. By encouraging the really good and conscientious workman, and not, as I have found it frequently, play off the worthless against the good in order to reduce his position.

4. Seek to establish boards of arbitration and conciliation, whereby employers and workmen may settle their differences amicably.

5. Give attention to the principle of giving the employees an interest in the firm with which they are connected. All these matters are in my humble opinion calculated to advance the best interests of our town and nation, and are well worthy the attention of all concerned. My own conviction is that we have the best workmen in the world, taking them as a whole, and that if we will only adhere to a good and honest article we can hold our position against all comers. Of this I am satisfied—that if I am spared to attend another trades congress the question involved in my motion will have considerably ripened, and I shall carry my resolution in its entirety. Yours truly,

S. UTTLEY.

Catering to Chinese Trade.

The latest reports from British consuls in China make frequent reference to the unremunerative prices of teas, which in many instances scarcely equal the cost of cultivation, and in consequence many growers are unable to maintain their plantations. India's competition is said to be the cause of this decadence of the tea interest. Apart from this, it is conceded that trade with China is susceptible of development far beyond the scale now attained. This may be inferred from a comparison with India, which, with its 253,000,000 of population, against the 400,000,000 of China, buys almost three times the quantity of foreign goods. Several practical hints were given by Lieut. H. N. Shore, in an address delivered before the London Society of Arts. Among the smaller items of trade a considerable demand has sprung up of late in China for old iron, such as hoops from bales of goods, boiler-plates, tires of cart-wheels, but especially for old horseshoes, as being easier to work up into agricultural implements, anchors, &c., than new iron. Horseshoes are mostly used for the manufacture of knives, and for fish plates for strengthening the axles of native carts. So great is the demand for old iron that at Shanghai literally acres of ground are said to be covered with it, waiting for transport to the interior. The superiority of foreign cutlery is readily admitted, and it is freely used. On this point Consul Alabaster remarks as follows:

"There is still a field open to our manufacturers in cutlery and ironware generally, which has been so far comparatively unworked, for the Chinese have none of our manufacturers' appliances, and when their needs are understood we might supply them at a great advantage over the native manufacturers; but it is no use sending out invoices of table knives, which the Chinese do not use, or scissors which are not adapted to their fingers; locks they cannot fit on their doors, or pans and trays they cannot find a use for. Native models might be departed from with advantage in nearly every case, but the conditions of employment must necessarily be considered. A padlock in China has to fit through two staples. Shears are used generally in place of scissors. There are no nails to pare, pens to mend, or corks to extract in a Chinese household. They do not use pins, or steel pens, or fenders, or scrapers, or iron tea-trays, but they have innumerable wants which we might profitably supply."

A novel prospecting shaft is being sunk in American Valley, near Quincy. A tube of boiler iron 4½ feet in diameter is being sunk, and is now down 228 feet, inside of which an immense plunger, weighing 1800 pounds, with a nose or point of steel, loosens the earth, which the plunger receives through a valve, and when filled is hoisted to the surface. Whenever large bowlders are encountered, the machinery is removed from the shaft and the miners go down and blast them out. This company, which is an Eastern one, and managed by a man who has had large experience in the Lake Superior copper mines and in the oil regions of Pennsylvania, expect to find a rich deposit of gravel, and the material being taken from the shaft, or tube, seems to justify the belief that such a deposit exists in that vicinity. This method of prospecting for gravel mines is something new, and the result will be watched with great interest by all miners.

The Iron Age

AND

Metallurgical Review.

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DAVID WILLIAMS, - *Publisher and Proprietor.*
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The Condition of Trade.

Dullness pervades all departments of the iron and steel trades, from the manufacturers of pig iron to the manipulators of steel, with exceptions only in the case of nail makers and structural-iron manufacturers. With great unanimity, the makers of pig iron, bar iron, crucible steel and steel rails assert that prices are now at the bare cost of production, and that no further concessions are possible—unless something gives way. But while furnaces are being blown out in various directions, those which continue in operation seem able to more than supply the demand. A more thorough attempt to restrict production will have to be made before a serious effect is produced on the market. A scarcity of pig iron must be felt before buyers will believe that such a contingency is possible. Among the bar mills we do not hear of any effort to reduce production. The mills evidently get some orders, trade being not entirely extinct, and manufacturers prefer to run as long as they can in order to keep their men together. The perfect organization of the working force of a large rolling mill is a very important and exceedingly difficult matter, and mill owners take heavy risks, in the hope that affairs will improve, rather than shut down and be unable to start up in good shape when an improvement comes. Still, there are rumors that several rolling mills will stop before long if prices make no change for the better. The steel-rail manufacturers express themselves very firmly against putting their prices lower than $37 at the mill, and deny reports of sales under that figure. They assert that a number of the most important steel works will cease production if the railroads refuse to buy at the price named, which means $37 at the Eastern works and $40 at Chicago and St. Louis. In view of these circumstances, the outlook for the winter is not cheering either for those who own iron and steel works or those who work in them.

The American Institute of Mining Engineers are indebted to the citizens of Troy for a very pleasant and successful meeting, a brief account of which appears elsewhere in this issue. The charm of exceptionally delightful weather increased the enjoyment of the visiting members, but the hospitality of the people of Troy would have made them forget discomforts due to bad weather had any been experienced. The last day was threatening, but not stormy, and although the party lost the view which on a fair day repays those who climb "Miller Hill," on the property of the Hudson River Ore and Iron Company, they had other and abundant compensation. The meeting was a good one from the standpoint of the transactions, and work and play were so evenly balanced that neither was neglected. The attendance was satisfactory and everything passed off successfully, as usual.

The High Price of Anthracite Coal.

We are in receipt of several letters from Eastern iron manufacturers in support of our demand for cheaper fuel. While the writers differ among themselves as to whether cheaper coal will make the manufacture of pig iron more profitable, some of them holding that prices of iron will be reduced in proportion to the lower cost of manufacture, yet they all agree on the main point—that the coal companies must scale their charges to conform with the lower range of prices for everything else. Not only should coal be furnished at a much cheaper rate to furnacemen, but it should be sold more cheaply to rolling mills and foundries. Rolling mills in the anthracite districts should not be forced to use bituminous coal, nor should foundries be obliged to resort to coke. Located where they are, they should get anthracite coal at such rates that bituminous coal and coke could not be brought to them from distant localities at about the same cost. The high prices paid by Eastern rolling mills and foundries for their fuel seriously handicap them in the ever-increasing competition with Western works. The majority of such works are so situated that their competition should be a matter of merit more than of price; but when the works of one section are compelled to pay exorbitant rates for a prime necessity of their business, the odds are all in favor of the other section. Eastern railroads are deeply interested in this matter, as they carry much freight from and to the rolling mills and foundries along their lines. The figures we gave last week for furnace transportation would be greatly increased by the addition of rolling-mill and foundry transportation, perhaps to the extent of 3,000,000 tons more annually. Their wishes should therefore be carefully considered, in deference to their position as profitable patrons of railroads.

The enormous production of anthracite coal, which is considerably beyond the needs of the market, as is proved by the long lines of loaded coal cars standing on side tracks of the coal-carrying railroads, at numerous points all the way from tidewater to the mines, justifies a very considerable reduction in prices, and that reduction would be made if it were not for the combination which holds prices up to an artificially high range in defiance of the operation of the natural laws of supply and demand. The coal companies complain of a scarcity of cars preventing them from sending more coal to the West, but, while grain cars may be somewhat scarce at this time of the year, it looks to a disinterested observer very probable that the companies could spare from the Eastern trade any number of coal cars for the Western trade, and, further, they would not be put to any additional expense for loading them. Appearances are very decidedly against the position taken by the coal companies in justification of their high charges for fuel to iron manufacturers, and if the latter act with determination, and unite, as they should do, in a strong effort to secure cheaper fuel, the companies will be forced to comply with their just demands. We invite attention to the following communications on the subject, and hope that other iron manufacturers will favor us with their views for publication.

122 RACE STREET, PHILADELPHIA, October 6, 1883.

To the Editor of The Iron Age.—SIR: We do not envy the anthracite-coal trade because of the extended period of prosperity it has enjoyed while stoppage or disaster has overtaken other industries. The feeling is now universal, however, that cheaper fuel is one of the necessities of the times. Any one familiar with the present cost of pig iron knows that it cannot be produced for the current selling prices, and that without a lower cost or higher price isolated furnaces now running must stop or fail, while the larger producers can merely live until their cash surplus is exhausted. Every furnace which blows out decreases the consumption of fuel enormously, and tends to weaken the coal combination and reduce the price. Why will not the coal companies yield to the inevitable gracefully, reduce prices and enable mills and furnaces to continue running? Such action would increase the demand for iron by convincing consumers that prices cannot be further lowered, and that would help to re-establish confidence. Iron ore in the East has been so reduced to meet the demands of the furnacemen that the business of mining it has ceased to be remunerative; freights are too high, and probably will be reduced to cover the emergency; labor will also yield 10 per cent. rather than be idle in winter, but these reductions in cost will not avail to keep furnaces and mills in operation without cheaper fuel. The fact that anthracite coal has for years maintained nearly a uniform price, while other industries largely using it have succumbed, is an argument in favor of lower prices.

A strong factor in this matter is the introduction of soft coal and coke. The bituminous fields cover so extended a territory, and the coal is so easily mined, that the price is now 65 cents a ton at the mines. A ton of coke can be made from a ton and a half of coal, and hence it is not surprising that soft coal and coke are being used extensively on the steamers and railroads and in the mills of New England, and in the mills and furnaces of the Schuylkill, Lehigh, Hudson and Delaware valleys. Soft coal is invaluable for rolling mills, while coke is the best fuel for blast furnaces, and their use will increase because of cheapness, and the regions heretofore supplied with anthracite coal will be invaded to a still greater extent in the near future. That is my opinion, having no personal interest in the matter.

While writing about coal, permit me to repeat two assertions which I made some ten years ago: 1. That coke would be the fuel of the future. 2. That while persons then living had seen the rise and wonderful development of the anthracite-coal industry, there were also those living who would see the practical ending of it for iron and manufacturing purposes, because of exhaustion of mines and increased cost of mining, when compared with soft coal. Both these assertions were laughed at by the iron and coal men and newspapers at the time, but I reiterate them in 1883, being still of the same opinion.

WM. E. S. BAKER.

CHESTER FURNACE, CHESTER, MORRIS COUNTY, N. J., Oct. 8, 1883.

To the Editor of The Iron Age.—DEAR SIR: In reply to your inquiry as to the price of anthracite coal to ironmasters, I would say it is entirely too high, and out of all proportion to other things; yet I cannot see how a reduction in the price would help the iron trade particularly, so long as we all pay about the same relative price, except in the case of those whose products are sold in outside markets—say, Western or Southern. Nearly all iron products are now sold at about cost in order to keep going. If you lessen the cost to all, down would go the price, owing to competition, in the same proportion. It is doubtful if a reduction of $1 per ton on pig iron would increase consumption in the least in our own market. What is wanted is less production or more consumption. We can control the former if we choose, but not the latter. Iron is cheap enough now, and a lesser price for coal means still cheaper iron, which may enable us to enlarge our market and output, but not our profits. The true way is not to make or produce more of anything than the people will buy.

Very truly yours,
W. J TAYLOR.

The Restriction of Nail Production.

There is no doubt that since Western manufacturers have been pursuing a restrictive policy the prices of nails have been held much more steadily than they were for a long time previous. Not only has this been the case in the immediate territory of the Western nail manufacturers, but prices have similarly been well maintained in the East. As the East is not so numerously provided with nail factories as the West, the continuous running of the mills on the Atlantic slope had no bad effect on the market. Indeed, if they had been stopped whenever the Western factories were stopped, the supply of nails would have been so inadequate to the country's needs that prices would have been materially advanced. A great advance in prices is a temporary benefit, but it is usually the cause of much mischief. Hence, it has perhaps been well for the nail trade generally that the Eastern mills have kept in operation, and that prices have not been "boomed." Nevertheless, the prices of the past three years have been fairly profitable, and the returns have, by sheer force, been kept satisfactory during the current year, while other branches of the iron trade have suffered from unrestricted production and prices at bare cost.

The satisfactory condition of the nail trade could not be permanently maintained under such circumstances. Whenever one branch of business is remunerative while all others are unprofitable, attention is directed to the profitable branch, and it is soon weighed down with fresh ventures. New nail works have been started in the East and in the West since the restrictive policy was inaugurated, old factories have been greatly enlarged, and more new works are projected. It is difficult to comprehend the motives for building new works, as the projectors, if they know anything about the nail trade, must understand that if the capacity of the country had for several years not been much greater than the demand, the works would not have been closed for weeks at a time. If the new works and the enlarged old works are governed by the restrictive policy, and profitable prices are thus sustained, how long will it take additional works to add so greatly to the capacity of the nail factories that they will have to stop two months at a time instead of one month, or four months instead of two? Perhaps the embryo nail makers think the restrictive policy will always be continued, and if they do not go into the combination they can run steadily and get combination prices. Perhaps the old members of the trade will permit this. If they do not intend to permit it they certainly possess the power to make matters very lively and very unpleasant for newcomers. The full capacity of the nail factories turned on without stint would take only a few months to put nails lower than this country has ever seen them. There would be widespread bankruptcy, of course, but it would effectually check the inclinations of a number of enterprising persons now turned strongly toward the nail trade as a promising field for a manufacturing investment. A serious dilemma is undoubtedly preparing for nail manufacturers. Shall they continue the restrictive policy, maintain paying prices and invite the construction of more nail factories, or shall they discontinue further attempts to control production, and see their trade become as hopelessly unprofitable as are other branches of the iron trade?

Sale of the Pittsburgh Bessemer Steel Works.

An important transaction has just occurred, which will create no little sensation in steel-rail circles. The Pittsburgh Bessemer Steel Company, Limited, have sold their plant at Homestead, near Pittsburgh, to Messrs. Carnegie Bros. & Co., Limited. The Edgar Thomson Steel Works of the Messrs. Carnegie lie on the opposite bank of the Monongahela River from the newly acquired works, and not far from them. The Pittsburgh Bessemer Steel Works consist of two 4-ton converters and a very complete blooming mill and rail train, with a capacity of possibly 75,000 tons of steel rails per annum. There are no blast furnaces connected with the works, the company having purchased their pig iron in the open market.

The new owners will discontinue the manufacture of steel rails at Homestead, and will operate the works on steel specialties. The Edgar Thomson Steel Works have for some time been inconveniently drawn upon for supplies of steel for the Hartman Steel Company, at Beaver Falls, and billets for the Union Iron Mills. The Keystone Bridge Works are also using increased quantities of steel, and the demand is growing so regularly and continuously that the Messrs. Carnegie have embraced the opportunity offered them to acquire possession of the Homestead Works, and thus relieve the Edgar Thomson Steel Works of the pressure upon them for steel for miscellaneous purposes. The Homestead Works will be supplied with cold pig iron from the Edgar Thomson Furnaces across the river, and will furnish steel to the establishments named above, in all of which Carnegie Bros. & Co. are interested.

There are several points about this transfer of property which are worthy of remark.

1. The present price of steel rails, which is $37 at the mill, is evidently near bottom, with the present cost of pig iron. This is demonstrated by the fact that the Pittsburgh Bessemer Steel Company, Limited, although composed of practical steel manufacturers, and although their works have been admirably well built and very skillfully and economically managed, yet were willing to sell their works at no premium on the cost. If there was any profit in making steel rails and selling them at $37, the company would certainly not have sold their works at such a price.

2. These works will now be withdrawn from the list of steel-rail manufacturers, and their capacity can be eliminated from speculations on the relations of the demand for steel rails to the supply. This is a reduction of 75,000 tons in the capacity of the mills, and places the remaining steel-rail mills of the country in a stronger position than they were in before. It also relieves the Edgar Thomson Steel Works of an active competitor in the immediate vicinity. Railroad officials will observe that this transfer very greatly strengthens the situation for steel-rail manufacturers, as well as demonstrates the truth of their assertions that $37 is as low for steel rails as they care to go. The sale of the Pittsburgh Bessemer Steel Works will very probably be followed by the closing up of some other works if $37 cannot be maintained.

3. The conversion of the Homestead Works to the production of steel specialties is a very striking indication of the strides which steel is making. The works were projected for the manufacture of steel ingots and billets to be used by the crucible steel makers of Pittsburgh, but were diverted to the manufacture of steel rails before they were finished, and now they will be used, not for their original purpose, but for the manufacture of steel specialties which will directly take the place of iron.

The Position of Copper.

Since our last editorial on the copper position the price of Chili bars in London has declined some £2, in consequence of rather heavier charters on the West Coast. It is announced that Peru is to be evacuated by the Chilean army of occupation on November 1, so that the men withdrawn from the copper mines of Chili during the war will now be restored to them. Since the war on the Pacific broke out, early in 1879, the annual production of those mines declined from nearly 50,000 tons to 38,000, but has been steadily increasing in the past two years through the re-employment of miners gradually returning from the seat of war, and now that the main army is to return many more men will be engaged in copper production. Chili may, therefore, in a year or two again reach her maximum of production of 14 years since, which was 55,000 tons. This will be a large accession to the world's supply, and will undoubtedly have an important effect upon the market.

The report of Mr. Roman Oriol, mining engineer, Madrid, having reference to the mining exhibition there and the mineral resources of Spain, remarks:

> The favorable circumstance that the chief copper mines of Huelva are owned by powerful companies with ample means and extended ore deposits on the spot, has facilitated their rapid development and the building of three suitable railroads, all finding their terminus at the port of Huelva—the Rio Tinto, Tharsis and Buitron lines—whose traffic is almost wholly the transportation of ores. Near Seville, at the Castillo station, there is a continuation of the Huelva deposits; at Carracedo, in the Province of Palencia, a copper mine is just being taken in hand by an experienced company; the same at Cerdido and Moecha, near Corunna, and, finally, at Changoa and elsewhere in the Province of Navarre, there are mines formerly worked that may still prove largely productive. In 1881 Huelva turned out 1,425,569 tons of copper ore; Seville, 28,830, and Corunna, Murcia, Navarre and Palencia, 1599. There were at the time, in the provinces named, 42 productive mines being worked with a joint ore surface of 4174 hectares, with 55 steam engines of, together, 708 horse-power in operation, and 9835 miners and other operators employed. In 1881 Spain exported 24,366 tons of copper and 450,870 tons of ore.

From this report it appears that copper production in Spain may still become important at other points besides Huelva. During the first six months of this year copper exportation from Spain was 10,921 tons, against 11,110 in 1882 and 6396 in 1881, while the export of ore was 307,414 tons, against 314,482 and 227,006 tons. In all 1882 there were exported 21,708 tons of copper and 571,442 tons of ore. The conclusion arrived at is that both Chili and Spain, the main producers abroad, are in good position for an increased output, and that, with the excess of American production also finding its way to Europe, speculation for a rise in England and France has little chance of proving a profitable venture unless it can be shown that there is a sufficient increase in the uses of the metal. For a year or two past the statistics in England and France have, if anything, rather favored the theory that consumption in Europe has not fallen behind the supplies received, but has been able to fully cope with it, and on the strength of this theory, we are inclined to think, the present Chili-bar speculation was mainly undertaken. But the general drift of business in Europe so far this year has run counter to all similar ventures, it would seem; failures have been frequent of late, even of old firms in England that had weathered the storms of many years, and the commercial mind is ill at rest. Hence, while the copper position may be sound enough, to speculate for a rise in its value might prove a poor operation.

As for our own market, it has hardly varied at all since the great decline, and the supposition is that, even if the price in Europe declines still further, it will not affect us here, because it is believed that the supply and demand on this side, with what we have shipped and are shipping to Europe, are pretty much in equilibrium. If our manufacturers felt at ease on this point, they would, in all likelihood, not hesitate at this time, when their contract with the Lake companies expires, to go into another similar pool, and this is precisely what they are seriously considering just at present. To what extent they can do without Lake copper, and take the cheaper outside brands for their winter supply, we cannot guess. But concessions on both sides would seem the best policy under the circumstances, and a mutually satisfactory arrangement to bridge over another six months may be perfected.

Forest Preservation.

The lumbermen of the Northwest have reached the sensible conclusion that the work of cutting off the valuable timber of that section should be prosecuted under very much sharper restraints than have hitherto been considered necessary. There are two reasons for their decision in this matter. The first is that if the forests are cut away at the present annual rate they will soon disappear. The second is that the market for lumber is now overstocked and prices are greatly depressed. It is probable that the second of these considerations has more weight than the first in determining the action of the Lumbermen's Association, but, whatever the reasons, we may hail with satisfaction anything which leads them to a policy of conserving the forests. This will, of course, reopen the perennial discussion concerning forestry and tree-planting, but as this has been conducted with more or less interest for years without accomplishing any practical results, it would seem as if the time would come when a new suggestion could be received with advantage. Experience has shown that no amount of newspaper talk will influence farmers or lumbermen to plant trees for the public good on land which, after clearing, is not needed for agricultural purposes.

It being the fact that trees, under ordinary conditions, will replace themselves in the course of half a century, owners of cleared land have generally thought it wiser to let nature take its course and provide a second growth without help from them. Bounties and rewards for tree-planting can scarcely be considered practicable, but in the States in which forestry is and for many years will be an important dependence, would it not be a good plan to exempt from taxation, State and local, lands replanted with trees after clearing, until such trees have become of merchantable value? The length of time during which this exemption could be accorded could very easily be determined by any one acquainted with forest growth, and it will be easy to provide all the necessary safeguards to protect the State treasuries against fraudulent claims. Without such exemption, present owners of land can scarcely afford to replant it with trees after clearing for the benefit which posterity will derive therefrom. Such land cannot yield any returns, and if even nominal taxes are collected from the owner, they are very much

more apt to forfeit their titles than to hold them, unless the cleared land is immediately available for settlement and cultivation. If, however, such land could be held without other cost to the owner than the annual interest on the purchase money, we think many thousands of acres of cleared land would be promptly replanted as an investment, and that capitalists would discover in tree-planting a profitable business if conducted on a large scale. Lands bought from the State for a nominal price per acre and cleared of their timber, would be purchased at some price by capitalists and replanted, and sooner in this way than in any other would the waste of timber-cutting be replaced. The taxes now collected on such land are too small to amount to anything as affecting the revenues of the States, and the benefit resulting from their surrender would probably be very much greater than could be purchased in any other way with the money represented by the amount of taxes remitted.

Our Foreign Trade.

The position of the country with reference to its foreign trade is very much better than it was a year ago, owing both to an increase of exports and a falling off of imports. The August statement of the Bureau of Statistics shows that for the eight months ended August 31 of this year the excess of exports of merchandise over imports was $45,139,409, and for the twelve months expiring on that date the excess of exports was $113,906,355. The corresponding periods of 1882 witnessed a different condition of trade. The balance was then unfavorable, the excess of imports being $53,628,507 for the eight months and $4,683,155 for the twelve months ended August 31. The reversal of trade movements in favor of this country represents a difference for the eight months' period of $98,767,916, and for the twelve months' period of $118,589,510.

This satisfactory state of commerce—satisfactory, at least, so far as our indebtedness to foreign countries is concerned—is reflected to some extent in the movement of gold in the periods referred to. In the eight months ended August 31 of this year foreign countries sent us $5,314,571 more than we sent them, and in the twelve months ended on the same date they sent us $14,281,067 more. But in the eight months ended August 31 of last year we sent to foreign countries $34,285,047 more gold than they sent us, and in the twelve months ended on the same date we sent $10,071,856 more. The change to the other side of the account which has taken place this year represents a gain to us in gold of $39,599,618 for the eight months and $24,352,923 for the twelve months. Our foreign trade evidently cannot be charged with any portion of responsibility for the existing commercial depression.

The window-glass workers who have resolved to establish a co-operative glass works will have the sympathy of all right-thinking persons in their endeavor to secure a larger return for their labor than they are able to do when working for wages. Experiments of this kind are perfectly legitimate, and the only reasons why they are seldom successful are those for which the co-operators are themselves to blame. It usually astonishes a man who gets into one of these enterprises to find that he has to work harder for himself to make both ends meet and get ahead in the world than he ever had to work for his employer; that manufacturing is not always profitable; that some years, instead of dividing profits, he must be content to assume a share of losses. These are contingencies which every employer has to face, but which rarely affect the men who work for wages. The trouble with most co-operative ventures is that in a short time a majority of the members become discouraged by the difficulties in the way of establishing business on a paying basis, and are quite ready to sell out to any one who has money to buy their interest. In this way most co-operative manufactories gradually pass into the control of a few persons who, having more capital or more courage than the average workingman, are able to hold on until the establishments become profitable. Very few of the so-called co-operative manufactories in this country are really co-operative. They started so, but very soon became stock companies, in which very few of the original founders retain any interest. We hope that the glass-blowers will be more fortunate in this respect, but we warn them in advance that establishing a business is by no means easy; that those who are not prepared to make greater sacrifices as proprietors than they were ever willing to make as workmen had better not go into the undertaking.

Some interesting facts concerning the consumption of coke in blast furnaces and the gradual reduction of the amounts used within the past 28 years were brought out at the recent meeting of the British Iron and Steel Institute. Discussing Mr. R. Howson's paper on "Blast-Furnace Economy in Relation to Design," it was stated that in the year 1855, with furnaces of little over 7000 cubic feet capacity, the consumption was about 39.64 cwt. of coke per ton of iron. In the immediately succeeding years a slow but steady decrease was experienced, the average for the year 1857 not exceeding 33.87 cwt. Taking quinquennial periods, the figures were found to be: 31.82 cwt. in 1862; 29.66 cwt. in 1867; 23.33 cwt. in 1872; 22.04 cwt. in 1877, and only 21.18 cwt. in 1882—these being average values for the whole year, and with large and small furnaces taken together. As to the influence exerted by the size of the furnace, it may be of interest to remark that with one having a capacity of 34,000 cubic feet, the average amount for the whole year was 19.38 cwt. per ton of pig, while at a smaller furnace, having a capacity of some 20,000 cubic feet, the quantity used was 22.77 cwt. Taking the larger furnace, which represents the total improvement in extra capacity and extra temperature of blast, there is a difference between 19.38 cwt., the consumption at large furnaces in 1882, and 39.64 cwt., the consumption at smaller furnaces in 1855, showing a reduction of 20.26 cwt. of coke per ton of iron within that period.

An advance copy of the *Locomotive* is just at hand, in which we notice some sensible remarks of some great success in regard to fusible plugs in boilers. One of these plugs, which is considered by the Hartford Steam Boiler Inspection Insurance Company a good pattern, is illustrated. This form of plug calls to mind an incident which happened some years ago at Fall River, where for a number of years those old-fashioned hay-stack boilers were in operation. One of these, shortly after being started up, on one occasion blew out a rivet which was in a place somewhat difficult to repair, and where for some reason only temporary repairs could be affected. The engineer put in a pine plug, driving it into the hole from the inside. We have forgotten how long it lasted, but it tided over the emergency, which was a week or more. The plug burned off until the leakage through it was just sufficient to prevent further charring, and while it was in operation, no doubt, performed the part of a safety plug, for, had it become uncovered, it would, no doubt, have given way with quite as much celerity as the ordinary fusible plug.

The Franklin Institute is to hold an international exposition of electrical appliances in September, 1884. Measures have been taken to have this what its names indicates, and to bring from all nations apparatus of every kind used for electrical work. One thing only is needed to make this successful from the very best point of view, and that is to so prepare for the exhibition that people interested in electrical appliances will come to see it. Its success will depend more upon the men who want the goods than upon the crowds who go to see it and wonder with open mouths at the big lights, colored bouquets and electric railways. The necessary acts of Congress have been obtained and goods will be admitted free of duty, or practically "in bond," as is usual in cases of international exhibitions of this kind. It is hoped that the Institute will be able to secure large and important representations from foreign countries, and from the character of the Franklin Institute little doubt exists as to the high character and success of the undertaking.

La Métallurgie, of Paris, publishes a memorial recently laid before the Minister of Public Works by a deputation from the Association of French Industry, requesting him to take measures to secure the purchase in France by the railway companies of the material necessary for the construction of the new lines. The Minister, it is understood, gave a reply which fully satisfied the deputation.

The Cost and Price of Lead.

New York, October 12, 1883.

To the Editor of The Iron Age: We saw an article in your paper of yesterday stating that the Pueblo Smelting and Refining Company, of Pueblo, Col., had on hand about 7000 tons of Pueblo lead. This is not so, as they have sold all their lead, and we bought balance they had in New York City. You also state that pig lead no doubt will go to exporting prices. This is doubtful, unless they discover lead ore in large quantities, the same as coal mines. You must bear in mind lead is mined in the far West, and cost of transportation has considerable to do with prices here. It is different in Europe, where mines are near tidewater, cost of transportation less, and smelting, &c., on account of labor, much less. We don't think a pound of lead has been sold by any of the desilverizing producers that has not cost them over 4¾¢ for last year—on an average, probably more. Now, let us look at about the cost to produce lead in this country. To mine 10 tons of lead ores, fully 23 tons of matter are taken out on an average. Say, to mine 23 tons of matter, at $3.45 per ton, $79.35.

10 tons of ore from 23 tons, at $7.98	$79.35
Assorting 10 tons ore from 23 tons of rock, dirt, &c	10.00
Cartage from mines to railroad depot, from 3 to 22 miles, $2 per ton	20.00
Freight on 10 tons to smelter, say, average from 60 to 700 miles	60.00
To smelt 10 tons ore in bullion lead, $6 per ton	60.00
Total	$229.35
As ores do not average over 15 per cent. per ton of 2000 pounds, it takes 10 tons of ore to produce 3000 pounds bullion, at 4¾¢	$142.50
Average amount gold and silver in 3000 pounds bullion, at $60	90.00
Total	$232.50

Or profit to mines of $3.22 on 10 tons of ore, if the following prices are obtained:

Price of 3000 pounds bullion lead, at $50 per ton	$75.00
Freight to New York or Newark, at $31.50 per ton	47.25
Cost of separating 3000 pounds, (1½ tons), at $12 per ton	18.00
Gold and silver	90.00
Interest two months on outlay	2.32
Total	$232.57

Now, there is loss in smelting ores, from 2½ to 5 per cent., we have not calculated for.

3000 pounds lead at 4¾¢	$142.50
Gold and silver	90.00
Total	$232.50

You see there is loss. You see mining ores at $3.40, and should lead bring 4¾¢ per pound in New York, there is loss of 7¢ per ton. You cannot say $3.45 is too much to mine lead. Coal companies obtain as much. These figures show why there are so many worthless mining companies—depreciation in the value of their stocks—as a good, fair mine don't pay to work, and few mines will produce 10 tons of ore out of 23 tons taken out. Lead is depressed from the fact that nearly all kinds of merchandise, stocks, &c., are depressed But when you assert lead must go down to exporting prices, you should be familiar with cost to produce. One year, on discovery of Leadville, it did go down to 2.9¢. The same the year after was 6¢, and 2000 tons sold at 6¢. To sum up: The consumption of pig lead, all kinds, is fully 132,000 tons a year—of this, over 103,000 tons of desilverized lead. At prices quoted for ores, don't pay miner and mines. If prices remain down, stop production. If price of lead goes anywhere near exporting prices, close up mines and cut off production of over $6,000,000 a year of gold and silver. As we have made our figures at 4¾¢, you can figure at price of lead sold at 4.2¢, less commission. You see result, and see what the miner gets for his ores then.

Yours respectfully,
J. H. Ackerman & Co.

METALLURGICAL NOTES.

A Portable Furnace and Assay Outfit.

A recent issue of the *Mining and Scientific Press*, of San Francisco, contains a description of a very convenient and serviceable outfit for prospectors and assayers. It is known as Tappeiner's combined portable assay furnace and assay outfit, and may be obtained from Messrs. John Taylor & Co., of 118 Market street, San Francisco. The furnace is made of sheet iron, with three openings in front. One of these is for the muffle, one for inserting picks and drills for sharpening, and the third to reach the ash-pit. Each is provided with a hinged door. The furnace is 24 inches high without the pipe, and 10 inches in diameter at the largest or swell part. It is lined with fire-clay, and its form is tapering, with the largest diameter near the top, so as to give room for the muffle and crucibles where most needed. There are four joints of pipe reaching 6½ feet above the furnace, made tapering, so that the four joints telescope one within another, and all are placed within the furnace, small end down, while being transported, and held in by the furnace cover, which is provided with a suitable fastening. The lower or larger section of the pipe has a large door through which to feed coal and remove crucibles. The pipe projects vertically from the center of the furnace top, so there is a direct upward draft. The base of the furnace is broad, to give it steadiness, and is braced by strong iron rings inside, so as not to be crushed in transporting. The following assay implements, &c., accompany each furnace, and are all packed within the furnace in and around the pipe, so the furnace occupies no more room when packed than before: A hammer, iron mortar and pestle, magnifying glass (for examining ores and reading graduations on button-measuring scale), brass wire sieve (No. 60, with tin frame), pulp scale, four No. 7 English crucibles and three covers, pair of combination tongs (for lifting crucibles, scorifiers and cupels), assay pouring mold, iron muffle, iron cupel mold (1¼ inch), tin box and can for crucibles and scorifiers, scale for measuring silver buttons, half a dozen test tubes, pair of wooden test-tube tongs, bottle of nitric acid packed in a tin box with a screw cover, three tin flux boxes, with covers and partitions for eight fluxes. The price of the outfit complete is $40.

New Battery Screen.

A new form of battery screen for quartz mills has just been patented by Mr. Andrew S. Hallidie, the well known wire manufacturer of San Francisco. Ordinary screens are made of a single sheet of punched metal, or piece of wire-cloth of the desired size of mesh. These screens are secured on a frame which is held in place in the grooves in the battery front by means of wedges. Whether of punched metal or wire-cloth, the screens are always of flat pieces. Mr. Hallidie, according to an exchange, branches out with the new idea of constructing the screen with angles or corrugations, so as to give more screen surface to the given size of battery opening. In the construction of the improved screen he employs woven wire, punched metal, or any other suitable screen material, and bends or corrugates the material into angular faces or flutings. Supporting rods or bars are fixed in the screen frame, so as to pass down in the angles of the corrugations and give any desired degree of stiffness. In order to retain these screens in position, they are fixed in frames which are shaped to fit the openings in the mortar in which the screens are to be placed. The top and bottom rails of these frames have corrugated slots or grooves formed in them, corresponding with the shape of the corrugations of the screen, so as to hold them firmly in place. The screen made in this way, instead of presenting a vertical flat surface to the splash of the water, presents a series of V-shaped faces, the screen surface being thus relatively increased, and the screen stiffened and strengthened. Mr. Hallidie is confident that this construction will make the screens last much longer, as they are not so apt to "bulge" and become broken as those of ordinary construction.

Fire-Brick Stoves.

Mr. J. P. Witherow, of Pittsburgh, Pa., under date of September 27, wrote the following from Redcar, England, to the *Iron and Coal Trades' Review*:

Although I arrived at Middlesboro' on Thursday last to attend the meetings of the Iron and Steel Institute, I had not the pleasure of being present in time for the discussion that morning on "Hot-Blast Stoves," &c. Being one of the company that purchased both the Whitwell and Cowper hot-blast fire-brick stove patents for the United States of America, and having been for the past 11 years directly in contact with their introduction and development in that country, I have presumed, in justice to the respective parties who participated in the said discussion, and for the benefit of the trade generally, to state a few facts in connection with this subject. Mr. Whitwell alluded to our practice in America, and I would state that there are now in operation and under construction in the United States some 70 distinct plants of Whitwell stoves, comprising about 215 stoves, as against 13 distinct plants of Cowper's, comprising 39 stoves. Of these 13 plants of Cowper's stoves three have been changed into the Whitwell type, viz., two of the Edgar Thomson, and one of the Lucy Furnace Company, Mr. Andrew Carnegie, of Pittsburgh, Pa., being the largest share owner of each company. These changes were determined upon after a test of the Cowper stoves for over two years at the above-named works, and, apart from the great expense, the above-cited companies were most reluctant to admit the irresistible and practical arguments that made the changes imperative. The remaining Cowper plants at the Edgar Thomson Works have been or are being changed, and filled with Mr. Julian Kennedy's patented hexagonal brick, having a round opening of 6 inches in diameter. The Cowper stoves above referred to worked very satisfactorily for the first year or 18 months, but as the small spaces in the regenerator gradually but surely became choked or closed from the great deposits of dust and the light, flocculent, fleecy matters carried by the escaping furnace gases, in the same ratio was the calorific power, energy or duty of the stove impaired, until a temperature of 800° F. could not be maintained. In these conditions the stoves would not consume one-half the required quanity of gas for want of draft, although supported by chimneys of over 200 feet high and 12 feet inside diameter. When such stoves were assumed to be cleaned by stopping off a stove for a week for that purpose, the cleaning was quite inefficient, and the stove in a week or two would be as bad as ever.

I might here state that, under the heavy duty demanded by American practice, and, therefore, the large volume and heavy pressure required of, say, 30,000 cubic feet of piston displacement per minute, which is propelled into the Edgar-Thomson or Lucy furnaces at a pressure of from 8 pounds to 10 pounds per square inch, to produce a daily output of over 200 tons, causes the escaping furnace gases to be heavily loaded with fine matter, as previously alluded to. Much of this actually adheres to the brickwork, so that no blast or concussion, be it ever so forcible, can dislodge it, and nothing will remove the same but actual contact with suitable scrapers. The Whitwell counterweighted scrapers can be passed down each of the spaces, thus guaranteeing that each space is kept open, and that, therefore, the whole stove surface is being utilized. This fact should never be lost sight of in discussing such questions, for it is not so much the heating surface, but the proportion that you are capable of thoroughly utilizing at all times, which is the great question. In my opinion, therefore, the different types of the Whitwell stove have no equal. As a practical illustration: Furnace No. 1 of the Isabella plant at Pittsburgh was remodeled in 1880, and supported by three Whitwells, 21 feet by 70 feet. Said furnace was put in blast February, 1881, and up to this date (if last two months equal the previous outputs) its whole aggregate will exceed at 1st of October 150,000 tons. The stoves are now as efficient as at commencement of blast, and both stoves and furnace, from all external indications, will make 300,000 tons before going out for repairs. This furnace is 75 feet high by 20 feet bosh; volume of blast from 25,000 to 27,000 cubic feet per minute; temperature average, 1400° F.; average pressure, from 6 pounds to 8 pounds per square inch. Should any of these facts be of interest to you relative to the above questions, you have the use of my name for supporting the same.

Separating Copper from Matte.

Lord Penzance has patented a process for separating copper from matte in which it exists with other metals. The regulus, after granulation, is treated with concentrated sulphuric acid and heated in any convenient way. The operation succeeds best if free access of atmospheric air is permitted; exposure on heated pans or plates, or in appropriate retorts, will answer the purpose. In a short time fumes of sulphurous-acid gas escape and with them a quantity of free sulphur. These increase, and the reactions become more complete as the operation proceeds and the pulverized mass approaches dryness. The heat should be continued until the regulus, which then appears like a gray powder, is completely dry and until no further films come away. As there is a strong tendency in the mass to form into a cake, it ought to be constantly stirred, or in some way kept moving during the process. This has also the effect of presenting fresh portions of it to the heated surfaces and favoring the escape of air and the escape of the acid gas. The mass, when cold, is treated with water, when the copper-salt formed in the process will dissolve with ease. It is generally the case that one operation does not extract all the copper, and portions of the regulus are found which have never been acted upon. These should be submitted to a second operation of the same kind, and so on until all the copper is extracted. Although it is essential that the acid should be concentrated as above stated, a weaker acid may be applied in the first instance with success, which by heating is allowed to concentrate itself with the regulus. The reaction by which the copper is rendered soluble does not take place until the acid is of sufficient density. The sulphurous acid may be used in the chambers for the manufacture of sulphuric acid. The copper may be extracted from the solution obtained, as above, by precipitation with iron or other ordinary methods. The inventor finds that the process is more easy and complete, if any iron that the regulus contains is by any suitable process extracted before treating the regulus for copper as above. This is particularly true of regulus containing a large quantity of iron.

English Methods of Manufacturing Iron in the Seventeenth Century.

The following interesting account, taken from M. A. Lower's "Contributions to Literature," appeared in a recent issue of the *Bulletin* of the American Iron and Steel Association:

The mode of making iron in Sussex in the seventh century is detailed by John Ray, the celebrated naturalist, in two papers appended to his "Collection of English Words." "This account of the whole process of the iron work," he says, "I had from one of the chief ironmasters of Sussex, my honored friend, Walter Burrell, Esq., of Cuckfield, deceased." The particulars of the *modus operandi* of the manufaccure, furnished from so authentic a source, are of sufficient value to warrant their introduction in this place.

THE MANNER OF THE IRON WORK AT THE FURNACE.

The iron mine lies sometimes deeper, sometimes shallower, in the earth, from four to forty [feet] and upward.

There are several sorts of mine, some hard, some gentle, some rich, some coarser. The ironmasters always mix different sorts of mine together, otherwise they will not melt to advantage.

When the mine is brought in, they take small-coal [charcoal] and lay a row of it, and upon that a row of mine, and so alternately S.S.S., one above another, and, setting the coals on fire, therewith burn the mine.

The use of this burning is to mollify it, that so it may be broke in small pieces; otherwise if it should be put into the furnace as it comes out of the earth it would not melt, but come away whole.

Care also must be taken that it be not too much burned, for then it will *loop—i. e.*, melt and run together in a mass. After it is burnt they beat it into small pieces with an iron sledge, and then put it into the furnace, (which is before charged with coals,) casting it upon the top of the coals, where it melts and falls into the hearth, in the space of about twelve hours, more or less, and then it runs into a *sow*.

The hearth, or bottom of the furnace, is made of sandstone, and the sides round, to the height of a yard or thereabout; the rest of the furnace is lined up to the top with brick.

When they begin upon a new furnace they put fire for a day or two before they begin to blow.

Then they blow gently and increase by degrees 'till they come to the height in ten weeks or more.

Every six days they call a *founday*, in which space they make eight tun of iron, if you divide the whole sum of iron made by the foundays; for at first they make less in a founday, at last more.

The hearth by the force of the fire continually blown, grows wider and wider, so that at first it contains so much as will make a sow of six or seven hundred pound weight; at last it will contain so much as will make a sow of two thousand pound. The lesser pieces, of one thousand pound, or under, they call pigs.

Of twenty-four loads of coals they expect eight tun of sows; to every load of coals, which consists of eleven quarters, they put a load of mine, which contains eighteen bushels.

A hearth ordinarily, if made of good stone, will last forty foundays, that is, forty weeks, during which time the fire is never let go out. They never blow twice upon one hearth, though they go upon it not above five or six foundays.

The cinder, like scum, swims upon the melted metal in the hearth, and is let out once or twice before a sow is cast.

THE MANNER OF WORKING THE IRON AT THE FORGE OR HAMMER.

In every forge or *hammer* there are two fires at least; the one they call the *finery*, the other the *chafery*.

At the finery, by the working of the hammer, they bring it into *blooms* and *anconies*, thus:

The sow they, at first, roll into the fire, and melt off a piece of about three-fourths of a hundredweight, which, so soon as it is broken off, is called a *loop*.

This *loop* they take out with their shingling-tongs, and beat it with iron sledges upon an iron plate near the fire, that so it may not fall in pieces, but be in a capacity to be carried under the hammer. Under which they, then removing it, and drawing a little water, beat it with the hammer very gently, which forces cinder and dross out of the matter; afterwards, by degrees, drawing more water, they beat it thicker and stronger 'till they bring it to a *bloom*, which is a four-square mass of about two feet long. This operation they call *shingling the loop*.

This done, they immediately return it to the finery again, and, after two or three heats and workings, they bring it to an *ancony*, the figure whereof is, in the middle, a bar about 3 feet long, of that shape they intend the whole bar to be made of it; at both ends a square piece left rough to be wrought at the chafery.

Note.—At the finery three load of the biggest coals go to make one ton of iron.

At the chafery they only draw out the two ends suitable to what was drawn out at the finery in the middle, and so finish the bar.

Note 1. One load of the smaller coals will draw out one ton of iron at the chafery.

2. They expect that one man and a boy at the finery should make two tons of iron in a week; two men at the chafery should take up—*i. e.*, make or work—five or six ton in a week.

3. If into the hearth where they work the iron sows (whether in the chafery or the finery) you cast upon the iron a piece of brass, it will hinder the metal from working, causing it to spatter about, so that it can not be brought into a solid piece.

The Birmingham correspondent of the *Ironmonger* says: "The Australian and New Zealand markets are not so valuable to English firms as formerly, owing to the merchants of those Colonies purchasing nails of American manufacture, and the same remark applies with equal force to the markets of South and Central America."

THE AMERICAN INSTITUTE OF MINING ENGINEERS.

The autumn meeting of the American Institute of Mining Engineers was held during the past week at Troy, N. Y. At the opening session on Tuesday, October 9th, the Institute was called to order by Mr. R. W. Hunt, president. The members and their invited guests were welcomed to Troy by the Hon. Martin I. Townsend, and a bright and witty response on behalf of the Institute was made by Dr. R. W. Raymond, of New York.

The first paper of the session was read by Prof. T. Egleston, of New York, who recited the results of some recent experiments of his on the resistance of gold to amalgamation under certain conditions. The presence of antimony and arsenic in auriferous ores seems to account to the author for the losses of gold in working ores on a large scale. This led him to melt mispickel with given quantities of metallic gold, and, after carefully roasting this fused product, to extract the gold again by amalgamation. He succeeded in reclaiming only from 40 to 50 per cent. of the gold, the balance being found in the tailings. Professor Egleston believes this discovery of sufficient importance to warrant the continuation of his experiments, and promises to report progress upon this subject at a future meeting of the Institute.

Mr. R. P. Rothwell, in discussing the paper, stated that his experience in the treatment of hundreds of tons of auriferous mispickel led him to differ from Professor Egleston, as he had not found these ores as refractory as represented, having succeeded in extracting from them from 80 to 85 per cent. of gold by amalgamation after roasting.

The paper of Dr. R. W. Raymond, on "The Law of the Apex," followed next in turn. The introductory part gave a short sketch of the development of the mining interests in the United States, their rapid growth, and the evolution of entirely arbitrary local laws in default of any established laws in the mining districts. The remainder of the paper was devoted to an elucidation of the conflicting decisions which might be (and have been) rendered in the adjudication of mining claims since the introduction into the United States Mining Laws of the word "Apex." The intricate legal points involved were treated in a thoroughly comprehensive manner and illustrated by blackboard sketches.

After a very short discussion of this paper by Prof. P. Frazer, of Philadelphia, the meeting adjourned to partake of the elegant hospitality of the Troy Club, which had tendered the members of the Institute a reception at their club-house.

Wednesday, October 10th, was chiefly devoted to the inspection of the Fuller & Warren Company's Clinton Stove Works, the Albany and Rensselaer Steel and Iron Company's works, and the works of the Burden Iron Company.

THE CLINTON STOVE WORKS.

These works were established at Troy, in 1831, and, during the half century which has elapsed, have manufactured a greater variety and averaged a larger annual production of first-class goods than has ever been produced by any one establishment of this class. Commencing at a time when stove manufacturing was in its infancy and bore much of the character of an experiment, the concern have gradually increased their facilities and extended the scope of their business, until they now find a market in all parts of the civilized world, and have gained an experience which is closely identified with the rise and progress of an industry which has assumed a position in the front rank of American manufactures. The foundry and shops are extensive and interesting. Owing to its location at the junction of the two great water thoroughfares of the Empire State, Troy has become the center of a railroad system which reaches to all parts of the American Continent, and affords excellent facilities for the accumulation of raw material and shipment of manufactured goods. The site occupied by the works is one of the earliest which was selected for the manufacture of iron goods in Troy. The works occupy a superficial area of nearly 6 square acres of ground, but as a large portion of the buildings are five stories in hight, they contain practically a working area several times greater than the ground plan, or equal in extent to a small farm. The eastern frontage extends for a distance of 500 feet along the Union Railroad Company's tracks (representing every railroad leading from the city), and the western frontage includes a dock privilege of the same extent upon the Hudson River, with elevated tracks for the transportation of coal and iron to the interior of the works. This location affords peculiar advantages in the management of incoming and outgoing freights. All full carloads and all heavy freights by water are transferred directly at the works. The engine house is located near the center of the plot, and the motive power is supplied by a 300-horse-power compound engine, which receives its supply of steam from two steel boilers, having a combined capacity of about 450 horse-power. All of the buildings having arched or lantern roofs are used as molding-shops, the shop extending directly back from the center, together with a cross T, being, we believe, the largest known molding-shop under a single roof, and containing 175 floors. Four cupolas, with a combined capacity of 90 tons daily, are required to supply the iron used in the various shops. Numerous elevators are necessary to raise the iron and fuel to the proper level, and tramways, over which they are transported, extend to each cupola. All of the buildings, as seen from the railroad, are occupied by the mounting and finishing department. The large building at the extreme left is new, and contains the main offices, show-room, &c. In addition to the departments named, the establishment includes a plating department, tin shops, carpenter shops, blacksmith shops, japanning shops, paint shops, &c., which are located in the various buildings. The large building at the extreme right is used exclusively for the storage of iron patterns used in the business, and is supposed to be as nearly fire-proof as it is possible to render a building constructed of brick. To insure the preservation of duplicate patterns, the originals of all pieces are stored in a separate building, which, so far as possible, is isolated from other portions of the works. The illuminating gas used is manufactured upon the premises. As a precaution against fire, a powerful steam pump is placed under the charge of the chief engineer, and an efficient fire bridgade is organized among the employees, with apparatus stations at convenient distances throughout the works. At night the periodical rounds of the watchmen are registered by electricity at the main office. In the run through the principal shops, which was all that the limited time permitted, very little idea of the extent or completeness of the establishment could be gained. But to most of the company stove founding was an unfamiliar art, and so much as could be seen of its various processes were noted with interest. Col. W. P. Warren conducted the party through the works and gave such explanation as the time afforded.

THE ALBANY AND RENSSELAER STEEL AND IRON COMPANY'S WORKS.

Leaving the stove works, the adjoining merchant steel and rail mills of the Albany and Rensselaer Steel and Iron Company were next visited. This building, which covers an area of about 65,000 square feet, contains an 18-inch three-high merchant train, and an 18-inch three-high sheet train, with a producing capacity of 10 tons out of one furnace and an annealing furnace. These two trains are driven by a 60-inch x 10-foot beam engine of venerable appearance. Having, however, been only recently overhauled, its days in the land of the Trojans are by no means numbered as yet. A Porter-Allen engine furnishes the power for another 18-inch three-high fast train, making 125 revolutions and having a capacity of 50 tons of 1⅛-inch 20-foot wire billets from 7-inch blooms. Another Porter-Allen engine furnishes the power for a 9-inch train, which will be brought to its full capacity as soon as the second furnace for it, now in course of construction, is completed. Besides these four trains the mill contains shears, drill, fish-bar punch, hot-saw, fan, lathe, hot-bed and a couple of Baldwin hot straighteners, aside from the requisite boilers and furnaces.

From the merchant mill the visitors passed to the rail mill, a brick building covering an area of about 37,000 square feet. The rail train is 21-inch, three-high, with three stands of rolls next to the engine, and two stands of merchant rolls arranged to deliver to the hot saws, &c. A feature of this train is the conveyer, which carries off sideways and automatically the scale which accumulates below the rolls, and was designed by Max Suppe. The rail train is driven by a 44-inch by 3-foot vertical condensing engine with Corliss valve gear. The average capacity of the rail train is 1800 tons; it has, however, a record of 2350 tons per week. The Gustin hot-curving apparatus is used in this mill. There are 13 heating furnaces fired with bituminous coal, all but one having horizontal overhead boilers with return flues. A prominent feature in this mill is the crop-end press, designed by S. Baldwin, of New York, for the utilization of the crop ends of rails, a fuller description of which will be given hereafter. The crop ends, after passing through the press, are rolled into plate, which is conveyed into the wing of the same building, where, by means of a number of punches and shears erected there, it is worked into the different shapes required for agricultural machinery.

Close to this building is the newly-erected storehouse for merchant steel. It is supplied with a central office for the shipping clerk, the main tracks for the reception as well as delivery of steel, and also the side tracks from the different racks, all leading to the scales in the center of the building. The racks are of exceedingly convenient and simple construction, the building is lofty and well lighted, and the arrangement of the racks such as to give an excellent idea of the stock on hand at almost a glance.

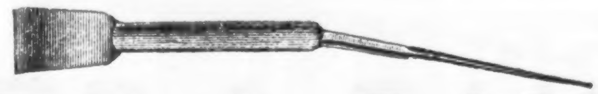
In the afternoon a visit was paid to the Bessemer mill of the company, about one mile below the merchant and rail mills. The disadvantage of this separate location is partly overcome by a narrow-gauge railway, upon which the hot blooms are carried on properly constructed cars from the lower to the upper mills. The Bessemer mill contains two 7-ton vessels set high, side by side, with three ingot cranes over a shallow pit. The internal diameter of the vessels is 6 feet. They have 15 tuyeres, with 12⅜-inch holes, and receive an average charge of 18,000 pounds. The blowing engine and pump-room are on the right side of the vessels. Adjoining it is the blooming mill. The four iron cupolas, which, running together, melt the iron for 600 tons of steel per 24 hours, are driven by two No. 7 Baker rotary blowers. Blast for the four spiegel cupolas is provided by a Sturtevant fan. The spiegel is run into a ladle so arranged that, in tipping over, it is slightly advanced so as to pour out the charge quickly and completely. The materials for the two sets of cupolas are brought to the charging floors by two Otis hoists. The average production of this plant is 12,000 tons of ingots per month.

The blooming train, which is the first one started in this country, is three-high, and is driven by a direct condensing 36-inch x 4-foot engine. Running at 40 revolutions per minute, the train rolls the product of the converting works from 15-inch ingots to 7-inch rail blooms by the aid of four men and boys. There are five reheating furnaces in the blooming department, in all of which bituminous coal is used. The last one built has an arrangement for cooling doors and frames with water which gives a great deal of satisfaction, and will probably be applied to the other four furnaces also. As is well known, these works are the oldest in the country. Nevertheless, under its excellent management there is everywhere evidence of economic working, and simultaneous gradual substitution of the most modern improvements and appliances as rapidly as the wearing out of the older types will permit the change to be made.

From the upper works of this company the members next went to the works of

THE BURDEN IRON COMPANY.

These works comprise blast furnaces, puddling and merchant mills, horseshoe mill, machine shop, hammer shop, blacksmith



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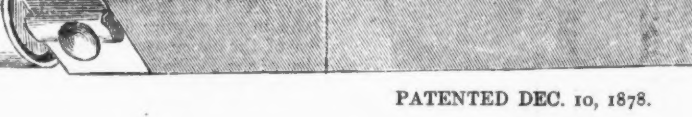

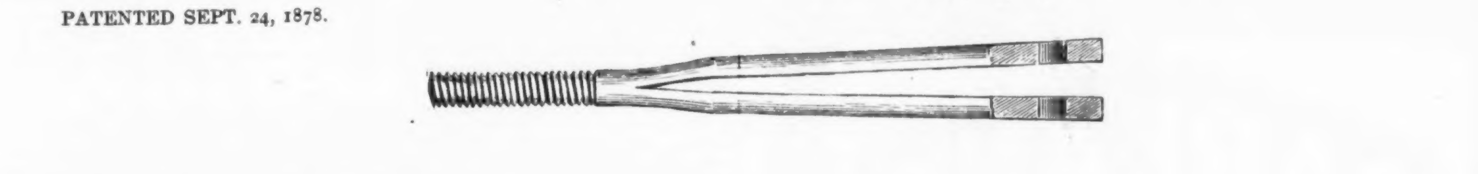

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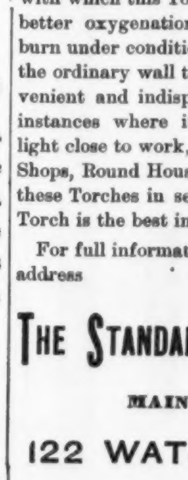
Also, Fine Swedes Iron Tacks for Upholsters and Trimmers' use.

Vajen's Patent Reversible Plumb Bob.

Point and Cap Interchangeable. Pat. Nov. 14, 1882.



This new and perfect *Plumb Bob,* designed to overcome all the disadvantages of other plumb bobs, is capable of being adjusted to any and all the forms required by the *Millwright, Mechanic and Civil Engineer,* has no equal and cannot be improved upon. It has the only proper shape for a bob, having a hole extending entirely through it, with a reversible, well-tempered *Steel Point* and *Screw Cap,* which, being interchangeable, enables the Bob to be suspended in the several positions as shown in cuts. The hole in the center of the Bob affording protection for the point when not in use. By filing the shoulder the Bob can always be adjusted and made true. The Plumb Bob is made of brass and nickel-plated, furnishing as pretty and as valuable a tool as there is in the market. We recommend it in preference to all other combination bobs, and guarantee it to give perfect satisfaction. This Plumb Bob is made in four sizes: 1, 2, 3 and 4 lbs. A liberal discount to the trade. Send for Price List.

Manufactured by

VAJEN & NEW, Indianapolis, Ind.

SAM SMITH, Agent, 154 Lake St., CHICAGO.

DILDINE'S PATENT

PATENTED NOV 26.1878.

The only adjustable Wire Cloth Sieve made. It will take out good seed from the refuse of windmills that cannot be cleaned by any other process. Can be adjusted to many different size and shaped meshes. No. 1 sieve will separate Plantain, Daisy, Buckhorn, Wild Carrot, &c., from Clover Seed; Red Top and Plantain from Timothy, and Timothy from Clover Seed. No. 2 will separate Rye, Cheat and Cockle from Wheat. No. 3 grades Peas, Beans and Corn. Indorsed by Hiram Sibley & Co., D. M. Ferry & Co., D. Landreth & Sons, Plant Seed Co., Henry A. Dreer, J. M. McCullough's Sons, B. K. Bliss & Sons, J. L. Breck & Sons, U. S. Agricultural Dep't, Washington, D. C.

Write for Prices and Discounts to

MILTON SIEVE CO. (Limited),

MILTON, PA.

shop, and most superbly designed and equipped general offices. The arrangement of this vast plant is eminently adapted to economical handling of both raw material and finished product. The different buildings are substantial, well lighted and ventilated, and the machinery employed of the latest and most improved type. The admirable condition of the shop and mill floors was the subject of general remark, and is evidence of efficient shop discipline. The horseshoe mill was the first department visited, and as this, as well as some of the other departments, will be hereafter more fully described, it is only necessary to state here that this department offered probably the greatest attraction to the visitors in the display of mechanical ingenuity. The horseshoe machines, of which there are eight, are built after the designs of the late Henry Burden, while the more recently introduced swaging machines were designed by Mr. James A. Burden. The capacity of this department alone is 160 tons of horseshoes per day. The party, after inspection of the other departments of the works, were taken to the water-mill, where the 60-foot water-wheel supplies the power for the rivet, bolt and spike works, and is the principal feature of interest. From here the party were driven to the country seat of Mr. J. A. Burden, to partake of his hospitality, and to rest from the somewhat fatiguing tour of inspection of the morning. In the afternoon the lower works of the Albany and Rensselaer Steel and Iron Company, to which we have already referred, were visited.

At the evening session of the Institute, which opened at 8 p. m., in Keenan Hall, papers were read by Mr. Robert Forsyth, of Chicago, on "The Bessemer Plant of the North Chicago Rolling Mill Company;" by Mr. Alfred E. Hunt, of Pittsburgh, on "Notes and Tests of an Open-Hearth Steel Charge Made for Boiler Plate," which we will publish in full next week, and a paper prepared by Mr. G. C. Stone, of Newark, N. J., on "The Determination of Manganese in Spiegel," which was read by the secretary.

On Thursday morning, the 11th inst., a short visit was paid by a portion of the members to the celebrated Troy collar and shirt factories. The morning session opened at 10.30 and continued until 1.30 p. m. At this session the following papers were read: "Description of a Chemical Laboratory Erected in 1863, as an Adjunct to the Experimental Steel Works at Wyandotte, Mich," by W. F. Durfee, of Bridgeport, Conn., to which we shall have occasion to refer more extensively in a future issue; "New Fossils Recently Discovered in Peach Bottom Slates," by Prof. Persifer Frazer; "Notes on the Elgin Water Gas Producers," by G. Barnes, and "A Systematic Nomenclature for Minerals," by Mr. H. M. Howe, of Boston. At the afternoon session of the same day, which opened at 3 p. m., the first business in order was the election of new members; some 40 names were added to the roll of the Institute. The following papers were then read in the order named: "Physical Properties of Coke as a Fuel for Blast Furnace Use," by Mr. J. Fulton, of Johnstown, Pa; "Notes on the Serpentine Belt in Chester County, Pa.," and "Supplementary Remarks on the Rocks of South Wales," both by Professor Frazer, of Philadelphia; "Boilers and Boiler Setting for Blast Furnaces," by F. W. Gordon; "Some Canadian Iron Ores," by F. P. Dewey, of Washington, D. C.; "Notes on an Experimental Working of Silver Ores by the Leaching Process," by J. H. Clemens, of Sonora, Mexico.

After the reading of papers was concluded, Mr. John Birkinbine, of Philadelphia, offered a resolution of thanks to the several committees and gentlemen to whom the members were indebted for many courtesies and most liberal hospitality, and also to the officers of the society. These resolutions were unanimously adopted, as was also the motion for adjournment.

The subscription dinner, an exceptionally successful affair of its kind, took place at 8 o'clock p. m. of the same day.

HUDSON RIVER CARBONATES.

At 10.30 o'clock on Friday morning the members of the Institute and a large number of invited guests gathered at the Troy Union Depot, for an excursion to the mines of the Hudson River Ore and Iron Company, in Columbia County. The fame of these valuable and long-neglected carbonates has spread far and wide, and much curiosity was felt to see them by those who had not previously had opportunity to do so. There were three carloads of excursionists, preceded by a baggage car in which there was baggage of unusual character. The run from Troy to Burden Station was short and pleasant. There the cars were side-tracked, and the company were invited to partake of a welcome luncheon served in the baggage car before mentioned. This disposed of, the company were transferred to cars on the narrow-gauge road built by the company from the river to their mines, and carried to Burden. From this point they walked to one of the neighboring summits affording a birdseye view of the company's property, and those who were equal to the task, under the leadership of Mr. Jas. A. Burden, followed the outcrop of the Dickson vein far enough to gain a very good idea of its extent and uniformity. This inspection stopped at the main opening on the Dickson vein, known as No. 2 slope, which has been opened in Y-form 250 feet into the vein, with galleries to right and left. At this point the vein is 24 feet thick, and almost wholly free from waste material. The ore shows a gradual improvement as greater depths are reached. An analysis made May 11, 1883, by F. G. Lodge, chemist of the Burden Iron Co., gave the following results:

Silica	8.08
Alumina	2.60
Lime	3.22
Magnesia	6.81
Metalic iron	52.05
Metallic manganese	1.93

Four analyses in April by A. S. Bertolet, at Crown Point, gave:

	No. 1.	No. 2.	No. 3.	No. 4.
Iron	51.67	51.09	50.68	51.88
Silica	......	9.14	.....	8.86
Phosphorus	0.029	0.030	.....	0.034
Sulphur	......	0.719	.....	0.682

More recent analyses are as follows:

By F. G. Lodge, July 12, for phosphorus only:

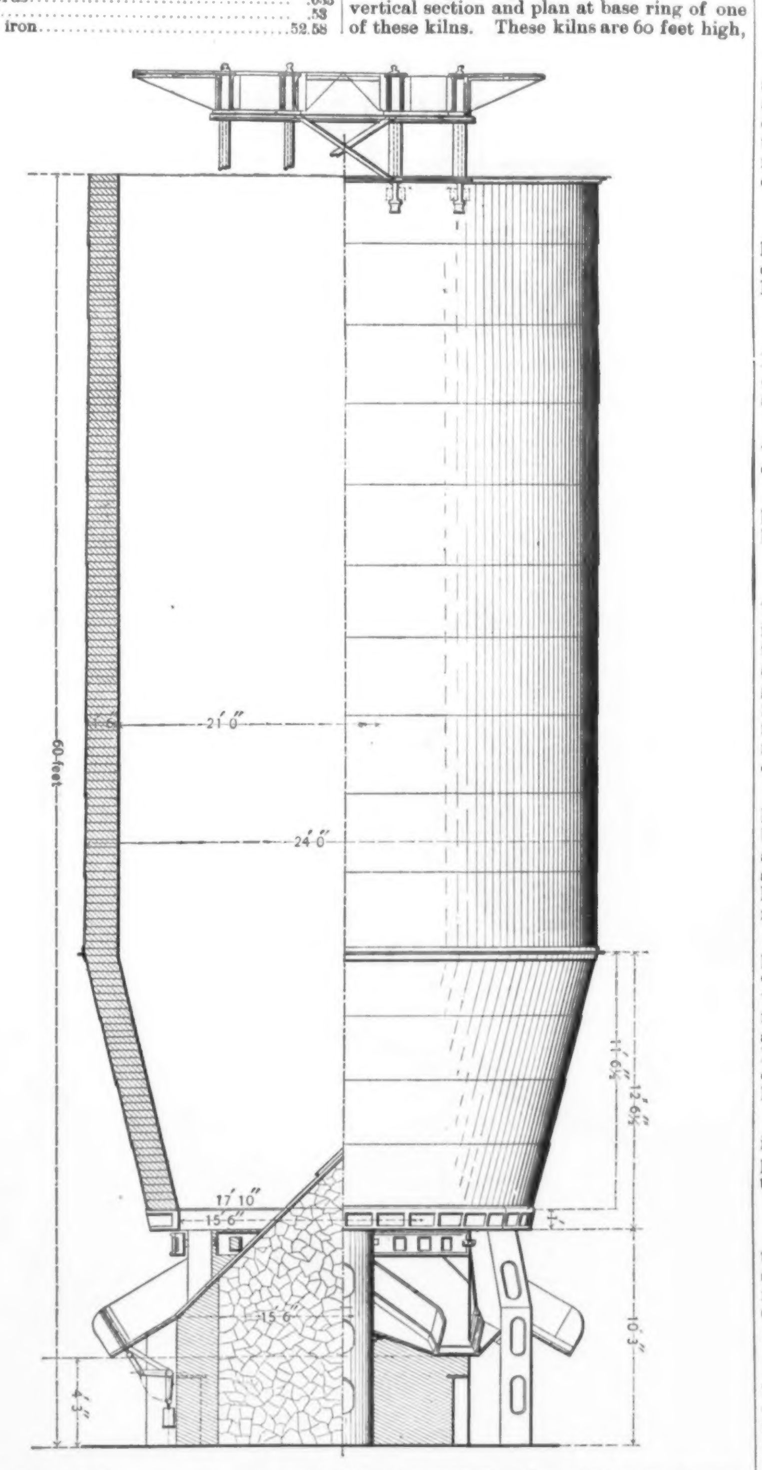
	P.
First sample	0.037
Second "	0.027
Third "	0.025
Fourth "	0.025
Fifth "	0.027
Average	0.028

By Booth, Garret & Blair, July 20:

Metallic iron	51.296
Sulphur	0.672
Phosphorus	0.027

By W. R. Walker, August 22:

Silica	8.11
Phosphorus	.033
Sulphur	.53
Metallic iron	52.58



Hudson River Carbonates.—Fig. 1.—Vertical Section and Elevation of Kiln for Roasting Carbonate Iron Ores.

These later analyses compare more than favorably with those made last spring from samples taken nearer the surface. Experience with these ores at the Crown Point Furnace, as noted by Mr. Bertolet, shows that the ores are self-fluxing, porous, non-refractory and remarkably uniform in composition. As compared with the dense Lake Champlain magnetites of equal richness, they have

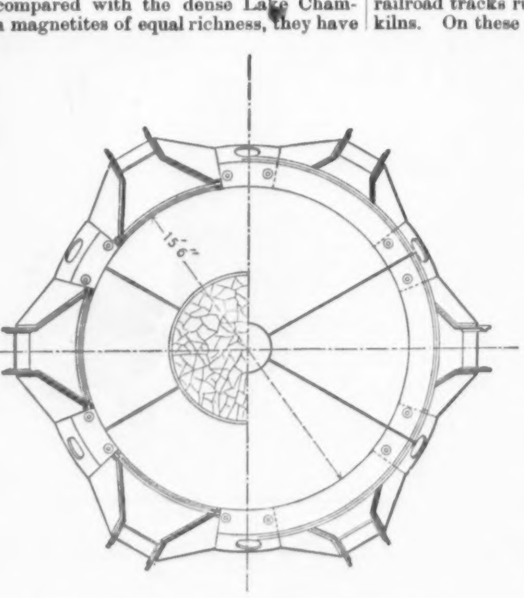


Fig. 2.—Horizontal Section Above Base Ring.

a low specific gravity, and this property, in conjunction with the fact that the basic oxides of the gangue are sufficient to take care of the silica, makes it evident that the ore cannot be expected to give any trouble in the blast furnace. The use of Hudson River ore at Crown Point shows the following results:

BURDEN WHILE WORKING MILL IRON WITH ALL LAKE CHAMPLAIN ORES.

Fuel.	Ore.	Flux.	Daily product.
4,400	5,600 @ 6,000	60 ℔.	54 tons.
WORKING ONE-EIGHTH HUDSON RIVER.			
4,400	6,200	52 ℔.	60
WORKING ONE-QUARTER HUDSON RIVER.			
4,400	6,280	44 ℔.	64

The Hudson River Ore and Iron Company's property and mines were so fully described, with a map, in our issue of May 24, 1883, that it is unnecessary at this time to note anything beyond the improvements since that article was written. The village of Burden now contains 60 dwelling houses, and begins to look quite like a town. The progress upon the roasting kilns is less rapid than was expected, but three of them will be finished within six weeks, giving a capacity of about 500 tons of roasted ore per day. Two more will be added as soon as possible, and the number will be increased to 10, which will constitute the entire plant. In the accompanying illustration we show a vertical section and plan at base ring of one of these kilns. These kilns are 60 feet high, which is 20 feet higher than those of the Cleveland district, where the roasting of carbonates is carried on very extensively. Experiments at Burden have shown that by increasing the hight of the kilns the roasting is effected more economically. As will be noticed in the vertical section, there are two railroad tracks running over the tops of the kilns. On these the ore cars are run. The relation of the slopes to the kilns is such that when the ore reaches the mouth of the workings it thence moves wholly by gravity, no labor being required in connection with it except to pick up the spill. The cars run by gravity from the mines over the tops of the kilns. There they are dumped; the ore passes through the kilns and is drawn from shutes at the bottom into cars, which run by gravity to the docks at an elevation sufficient to discharge their contents into boats without handling, or on trestles over a siding of the Hudson River Railroad. Everything is being built on the most liberal scale and in the most substantial manner.

Since May last considerable new machinery has been put in place. There is a pair of compressors at work and another pair is building. Those now in use run 16 drills. The hoisting machinery is also in position and at work at No. 2 Slope, and the narrow-gauge railroad from the river to the mines is practically finished. Everything is in good shape, and under the supervision of Mr. Allan Sterling, the resident general manager, the work is progressing rapidly and in the very best manner. The opinions we expressed as early as 1874 concerning the value of these carbonates and their importance to the iron industries of the Eastern States have been confirmed by experience, and we do not hesitate to venture the prediction that the Hudson River Valley will, in a few years, become the seat of a vast iron-producing industry, the product of which shall be even more effective than the present tariff in closing our seaboard markets against foreign irons and foreign ores. There is probably no point in the United States at which iron can be made as cheaply to-day as on or near New York Bay, quality considered, and the cost of transportation to the nearest consuming and distributing market added to the cost.

Later in the afternoon the party returned by the special train to Hudson, and there separated—some going north and some south.

INDUSTRIAL ITEMS.

MAINE.

The Monson slate quarries now employ about 300 men. It was not much over a year ago when but 25 or 30 were employed. The company are filling large orders for slate from the South and West, and the narrow-gauge railroad just completed is taxed to its utmost capacity.

NEW HAMPSHIRE.

The Thurston Sewing Machine Company have moved their works, with the exception of their knob-screw department, to New Britain, Conn.

MASSACHUSETTS.

The Mt. Hope Iron Works of the Old Colony Iron Company, at Somerset, are running extra time. The company's Taunton works are in full operation.

The Taunton Locomotive Works are at work night and day on a large order just received for the Union Pacific Railway.

The Union Needle Company, of Middlesboro, are employing 70 hands, and report business unusually good for this season.

CONNECTICUT.

The A. B. Burritt Hardware Company, of Waterbury, are building a large malleable iron foundry, 175 x 50 feet, which they hope to put in operation this week. They are also erecting a factory for finishing steam, gas and water fittings, with the necessary facilities for turning out the Burritt automatic sprinkler. The company also cast malleable and light gray iron castings to order.

The goods to be manufactured by the Stanley Works in their old factory just vacated by the Electric Company, at New Britain, are to be tacks of all kinds, shoe nails, &c.—a new line of goods for that city. Electric lights will be used. Machinery is already moving and goods being turned out.

The Russell & Erwin Manufacturing Company, of New Britain, are making a number of important additions to their works, among which are a new brick foundry, 230 x 50 feet; a new finishing shop, 133 x 44 feet, and a new brick boiler house, 132 x 45 feet. In connection with the latter, they are thoroughly remodeling their system of steam heating.

The Cheshire Watch Company have been incorporated, and have been freed from the payment of taxes for five years. The capital of the company is $100,000.

NEW JERSEY.

During the month of August 57 locomotives were turned out and shipped from the shops in Paterson, divided as follows: Thirty-four from the Rogers Works, 14 from the Cooke Works and 9 from the Grant Works.

PENNSYLVANIA.

Clark, Reeves & Co., of Phœnixville, have taken the contract to build a new iron bridge over the Schuylkill River, near Reading, for the Wilmington and Northern Road. It will take the place of the old wooden bridge now in use, and will cost about $45,000.

The Tripoli Slate Company, whose quarries are in Lehigh County, have been chartered by the State. The capital is $200,000.

The anthracite coal companies have agreed on a suspension of work in all collieries for the first three days in November.

The nail factory of the Hollidaysburg Iron and Nail Company resumed work on October 8, after a suspension of about two months. The machinery was thoroughly repaired and new foundations put in.

Blain Bros., of the Huntingdon Car Works, have been unsuccessful in their endeavors to secure an extension from their creditors, and the works will be sold this month.

The managers of the Iowa Barb Wire Works, at Johnstown, had made partial arrangements to move half of the plant to Easton last week, but in consequence of a press of immediate orders the programme was changed. The new buildings at Easton are all ready to receive the machinery, &c. The works at Johnstown continue to run 14 hours a day, and at present those in charge of them state that they do not know when it will be possible to move them.

PITTSBURGH AND VICINITY.

The employees of the Westinghouse Air Brake Company will commence working double turn this week.

The articles of association of Jones & Laughlin, Limited, and Laughlin & Co., were filed last week in the Recorder's office. The capital stock of the former is $4,000,000, subscribed as follows: Benj. F. Jones, $1,600,000; Thomas M. Jones, $200,000; Henry A. Laughlin, $266,666.66⅔; Geo. M. Laughlin, $266,666.66⅔; Jas. Laughlin, Jr., $266,666.66⅔; Eliza L. Phillips, $200,000; Mary F. Laughlin, administratrix, $200,000; B. F. Jones and Jas. Laughlin, Jr., executors of Jas. Laughlin, deceased, $1,000,000. Of this amount, $3,812,532.33 is by property and $187,467.67 by cash. The capital stock of the latter is $900,000, subscribed as follows: B. F. Jones, $300,000; Thos. M. Jones, $75,000; estate of Alex. Laughlin, Jr., by Mary F. Laughlin, administratrix, $75,000; estate of Jas. Laughlin, by B. F. Jones and Jas. Laughlin, Jr., $75,000; Henry A. Laughlin, $100,000; George H. Laughlin, $100,000; Jas. Laughlin, Jr., $100,000; Eliza L. Phillips, $75,000. There are 900 shares of the value of $1000 each. The property subscribed is $866,391.20, and the cash $33,608.80. The property is the iron and steel manufactories, warehouse, coal loans, &c., of the well-known firms of Jones & Laughlin and Laughlin & Co., Pittsburgh, which have been changed to two limited concerns.

VIRGINIA.

The people of Lynchburg are much elated over the prospect of the early starting up of the old James River Iron Works, which have been purchased by Col. A. H. Leftwich. The works consist of a main building, 242 x 72 feet, with an annex 72 x 45 feet, and are very completely equipped, having been thoroughly renovated and refitted in 1880. There are four double puddling furnaces in the works, and three trains of rolls, one of which, the rail train, will be changed into a nail-plate train. The other trains are a muck train and a bar train. This latter train is in very good order, and will probably be put in operation soon. Colonel Leftwich will also add to the works some nail machines, and expects to have them in operation by January 1. The mill will be run by water-power, the whole volume of the James River being available by means of two large wheels of 500 horse-power each. The works will be known as the Old Virginia Nail and Iron Works.

According to a Virginia paper the Buck and Hupp furnace, in Shenandoah County, was put in stock a short time since. It is owned by capitalists from Pennsylvania and New York, and is vigorously managed. Mine Run Furnace is about five miles above Little Fort Mountain. It is owned by the Shenandoah Iron Manufacturing Company, with headquarters in Alexandria. Nothing is doing at it. Some years ago it was operated with good success, at least so far as good returns of metal are concerned.

The Cook Furnace, at Wilton, on the Richmond and Alleghany Railroad, is being pushed rapidly to completion.

OHIO.

The settlement of the financial troubles of the Ward Iron Company and L. B. Ward, of Niles, by the assignees, Messrs. Ratliff & Stull, is progressing as satisfactorily as could be expected. The previous failure of James Ward was so disastrous and complete that the creditors got but about 3 cents on the dollar. What the creditors by this present failure will get the assignees have not as yet intimated. A portion of the plant, the Russia mill, is being successfully operated now by Messrs. Cleveland, Brown & Co., of Cleveland, upon a fixed rental. The agreement was to the effect that if the property proved a paying one they should take it and pay the appraised value for it. It is now stated that the assignees have about consummated a sale of the rolling mills at Niles and New Philadelphia for the sum of $100,000. The incumbrances on the two amount, with the interest, to just about this figure, so the sale has in it nothing of advantage to the general creditors.

The Steubenville Furnace property, including 200 acres of coal land and 42 coke ovens, is announced for sale on the last day of October by David McGowan, trustee. The furnace has until within a short time been leased by the Cleveland Furnace Company, of Cleveland. The furnace is 60 x 16, and was first blown in in 1872.

Belfont Furnace, at Ironton, is averaging 50 tons a day on a four-year-old hearth.

ILLINOIS.

Rust & Coolidge, of Chicago, have taken a contract for the bridge over the Menominee River, in Wisconsin, on the Marinette Branch of the Milwaukee and Northern road.

The Northwestern Steel Wheel Company, of Chicago, through a change of name, is now the Star Wheel Company. The company will manufacture steel agricultural wheels, and their new works will be in operation some time this week.

The American Pneumatic Iron Company has been incorporated in Chicago, with a capital of $1,000,000. Other new organizations in Chicago are the Chicago Automatic Steam Engine Manufacturing Company, capital $300,000, and the Phœnix Manufacturing Company, capital $60,000.

The Hall Safe and Lock Company contemplate the establishment of a branch manufactory near Chicago at an early day.

The Ætna Iron Works, of Quincy, are doing a large trade in iron store fronts and ornamental ironwork.

MISSOURI.

The Dutro Car Wheel Company, of St. Louis, are at last occupying their new works in all departments, and are entirely out of the old buildings. They have been removing their machinery piecemeal for the last two months on account of great press of business, which would not allow them to stop the whole works at once.

The Helmbacher Forge and Rolling Mill Company are running but one of their puddling furnaces, and have two hammers idle, one of which is being repaired.

The Shickle, Howard & Harrison Iron Company contemplate a series of extensive additions to their works, the first of which, a 160 x 60 feet pipe foundry, is already under way. They expect to double their capacity by these improvements.

The spike department of the Tudor Iron Works was idle last week on account of a strike, but is in operation again.

INDIANA.

The Lafayette Car Works, at Lafayette, are building 1000 box cars for the New York, Chicago and St. Louis Railroad.

MICHIGAN.

The E. T. Barnum Wire and Iron Works, Detroit, have recently moved into their new factory, corner of Howard street and Wabash avenue, Detroit. It is a building 400 feet deep by 240 feet front, furnished with late and improved machinery. They employ over 700 hands, the majority of whom are skilled mechanics. In some departments they are obliged to work two gangs, running, as they do, day and night.

Bangor Furnace has blown out and will await a better condition of the market before blowing in again.

The Iowa State Coal Mine Inspector has received reports from nearly all mines in the State, and he fixes the output for the year ended June 30, 1883, at 3,881,300 tons, against 3,500,000 tons last year.

SARGENT & COMPANY,

37 Chambers Street, New York. **Factory at New Haven, Conn.**

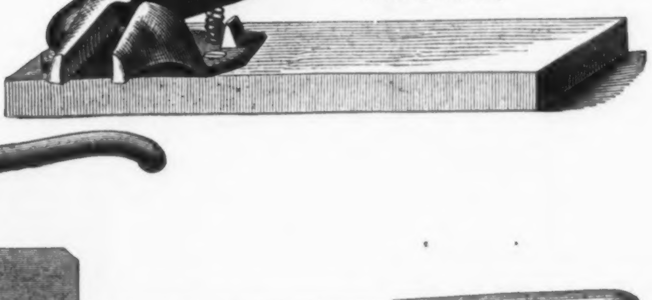
MANUFACTURERS OF

HOUSE FURNISHING, BUILDERS' AND SADDLERY HARDWARE.

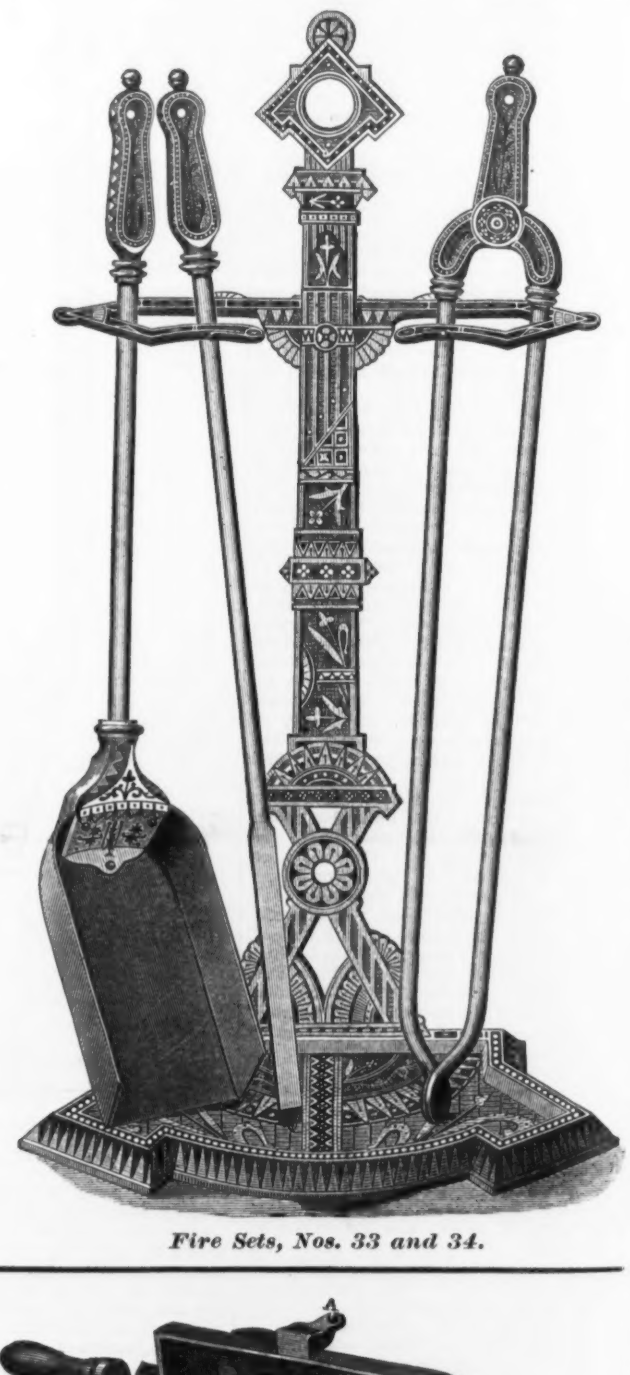
Cottage Fire Sets, Nos. 122 and 126.

Ring Top Fire Dogs.

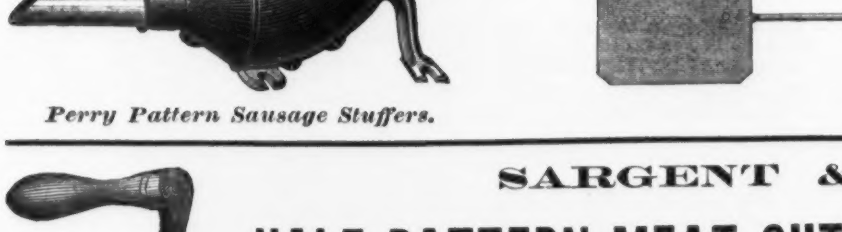
Brass Top Fire Dogs.



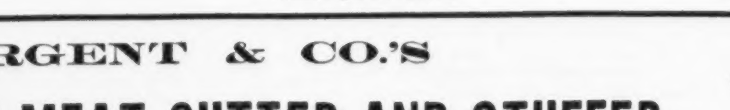
Nut Cracks.



Fire Sets, Nos. 33 and 34.



Perry Pattern Sausage Stuffers.



Cake Turners.

SARGENT & CO.'S

HALE PATTERN MEAT CUTTER AND STUFFER.

Works Rapidly,
Cuts without Tearing the Meat,
Easily Cleaned,
Self-Sharpening.

Showing the Hale Cutter Closed.

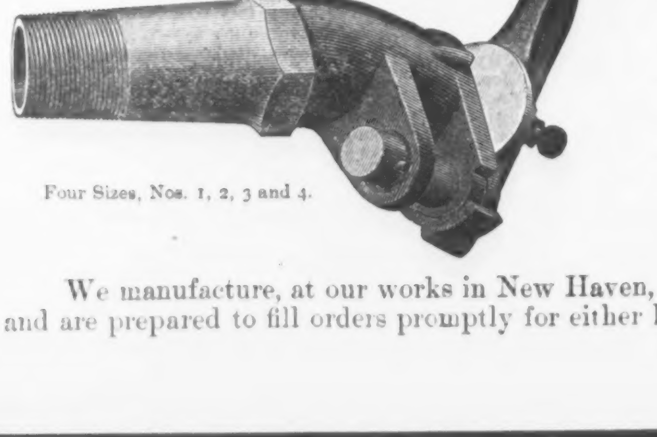
Showing the Hale Cutter Open.

SARGENT & CO., Manufacturers,
New York, and New Haven, Conn.

STEBBINS' MOLASSES AND OIL GATES.

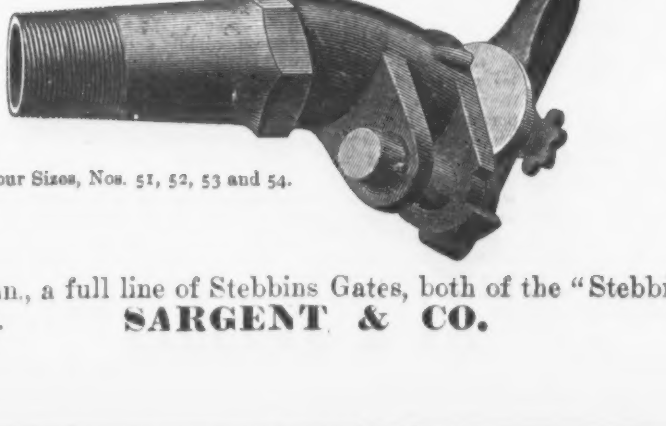
The Original and Only Genuine Stebbins Gates.

WITH ROUND HEAD SCREW.



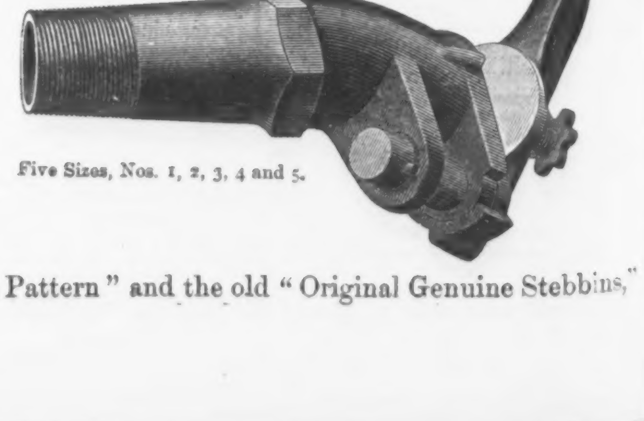
Four Sizes, Nos. 1, 2, 3 and 4.

WITH THUMB SCREW.



Four Sizes, Nos. 51, 52, 53 and 54.

Stebbins Pattern Gates.



Five Sizes, Nos. 1, 2, 3, 4 and 5.

We manufacture, at our works in New Haven, Conn., a full line of Stebbins Gates, both of the "Stebbins Pattern" and the old "Original Genuine Stebbins," and are prepared to fill orders promptly for either kind.

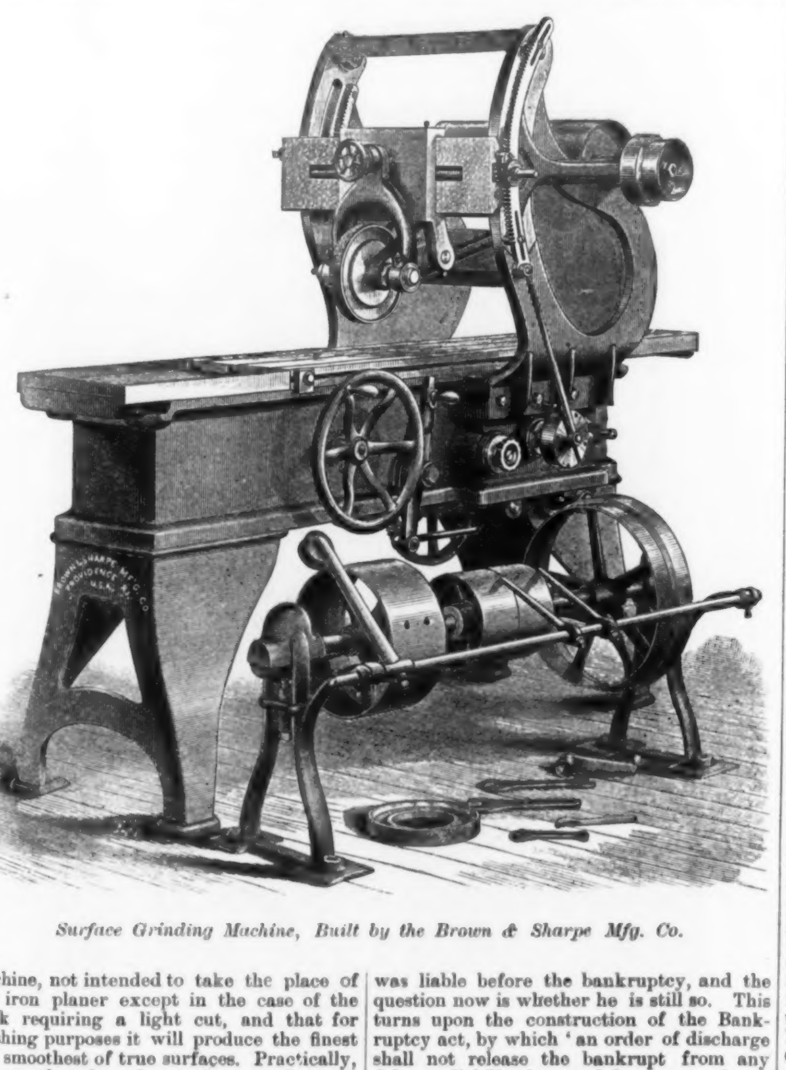
SARGENT & CO.

Surface Grinding Machine.

The accompanying illustration represents a surface grinding machine made by the Brown & Sharpe Manufacturing Company, of Providence, R. I. It is designed for flat and true surface grinding and finishing. This machine is capable of producing the finest and truest of surfaced work upon either soft or hardened or chilled metal, and is an excellent example of the advanced type of labor-saving machine tools, because the labor it saves is not only that of the ordinary vise hand, but also that of the most experienced and skillful fitters, a class of labor that it is very difficult indeed to obtain. Furthermore, as this class of work requires the most expensive of files, the saving effected by the use of the emery-wheel instead is very great. In proportion as the dimensions of a piece of work are increased, the difficulty and expense of producing it by hand work are very much augmented, so that days may be consumed upon a piece of work that may be finished in a far superior manner in this machine in a few hours.

It is to be understood, however, that this is, in every sense of the word, a finishing machine, not intended to take the place of the iron planer except in the case of the work requiring a light cut, and that for finishing purposes it will produce the finest and smoothest of true surfaces. Practically, it seems that the only requirement for producing such surfaces is perfect guides for the table. As these guides are finished by scraping and are carefully covered by the table slides, so that they are not exposed at either end of the stroke, this requirement is met as nearly as is possible with our present means of working. The machine will practically produce a surface plate not only in the softer metals of cast and wrought iron, but also in hardened steel. It will grind 14 inches wide, 13 inches long and 10 inches high, using a 12-inch emery-wheel. For all finishing parts of machinery, whether of cast iron, wrought iron or steel, whether soft or hard, for punches, dies, straight-edges, flattening dies, &c.

The emery-wheel is carried on a head upon a cross slide similar to that of an iron planer, but instead of the faces of the uprights being vertical, they are an arc of a circle of which the axis of the belt-drum is the center, so that the tension of the belt is not affected by the raising or lowering of the cross-slide. The pair of bolts driving the emery-wheel are arranged so as to be tightened by a hand-wheel in the top of the slide. The feed-motions, like those of the planer, are automatic. The adjustments throughout are made with the greatest ease. These machines are made of two sizes, the largest of which will grind 5 feet in length. The details of the machine are worked out with the greatest care, and there are many novel points of construction which are particularly valuable. It is convenient and easily handled, and, from its capacity to produce the best of work with low-priced labor, it will become indispensable.



Surface Grinding Machine, Built by the Brown & Sharpe Mfg. Co.

It is reported that the work of demolition of old down-town structures is to be carried on during the next six months on no inconsiderable scale. Several contracts are about to be signed for the erection of large buildings for office purposes, and it is probable that within a very few years no part of New York will present such a reconstructed and improved aspect as that south of Wall street.

A correspondent of an English paper proposes a rather neat device to be carried to sea on steamers for the purpose of mending broken shafts. It consists simply of a steel clamp large enough to inclose a coupling, and arranged so that by a little skill it can be fastened on to the shaft at any point, and in case the break takes place in the journal, will form a journal bearing of itself, and can run in a temporary box. Like all other inanimate objects, a crank-shaft, when breaking at sea, breaks in the very worst place in which repairs could possibly be made, and hence it is generally the case that the vessel's engineer has to forego practically all repairing until a port can be reached. The clamp is made in such a way that it can be put on over and completely inclose a coupling.

LATEST LEGAL DECISIONS.

BANKRUPTCY—FRAUD OF ONE PARTNER—DISCHARGE.

One of a firm of attorneys received money from a client to invest, but converted it to his own use. The firm went into bankruptcy and obtained a discharge. The client whose money had been taken by fraud sued one of the other partners for the amount, claiming that as this liability rested in fraud it was not, under the Bankruptcy act, barred by the discharge. The defendant contended that as to him, he not having participated in the fraud, the liability was a simple debt only, which the discharge released him from. In this case—Cooper vs. Pritchard—the plaintiff recovered a judgment, and the defendant carried it to the Court of Appeal in England, where it was affirmed. The Master of the Rolls (Brett), in his judgment, said: "As this money was intrusted to the firm through one of its members who could receive it for the partnership, the defendant was liable before the bankruptcy, and the question now is whether he is still so. This turns upon the construction of the Bankruptcy act, by which 'an order of discharge shall not release the bankrupt from any debt or liability incurred by means of any fraud or breach of trust.' Unless we can construe these words to mean that the fraud must 'have been committed by him,' the defendant, as a bankrupt, the contention that this is a simple debt cannot be allowed. There is nothing to justify us in altering the words of the section, or putting in any words which are not already there." Lord Justice Lindley added that the debt was a debt of the firm incurred by fraud, and he illustrated this in the following way: "Suppose in a firm of distillers or tobacconists one of the partners, without the concurrence or knowledge of the other, in the course of the business of the firm, commits offenses against the revenue, whereby penalties are incurred, the debts so arising would clearly be excepted. The innocent partner could say that he had taken no part in the offenses against the revenue, and therefore was entitled to his discharge. The language of the section is general, and we ought not to restrict it." Lord Justice Fry also said: "I see no reason for limiting the plain words of the section. This was a debt or liability clearly incurred by means of a fraud. Whether it was incurred by means of a breach of trust it is not necessary to decide."

CUSTOMS—DRAWBACKS.—FAILURE OF SECRETARY OF THE TREASURY TO CARRY OUT REGULATIONS.

An act of Congress allows drawbacks to be made on articles manufactured from imported articles and exported, to the amount of duty paid upon the materials, but as the Secretary of the Treasury did not enforce the regulation made to carry the act into effect, the Court of Claims decided it had no jurisdiction of a suit to recover the amount of such duties—Campbell vs. United States—brought by them to recover the duties they had paid on linseed which they manufactured into linseed oil and oil cake and had exported. An appeal was taken to the Supreme Court of the United States, where the judgment was reversed. Justice Miller, in the opinion, said: "It would be a curious thing to hold that Congress, after clearly defining the right of the importer to receive drawbacks upon subsequent exportation of the imported article on which he had paid duty, had empowered the Secretary, by regulations which might be proper to secure the Government against fraud, to defeat totally the right which Congress had granted. If the regulations of themselves worked such a result, no court would hesitate to hold them invalid, as being altogether unreasonable. But the regulations in this case are not unreasonable. It is the order of the Secretary of the Treasury forbidding the collector to proceed under these regulations in any other mode which is the real obstacle. Is that order a defense to this action? Can the Secretary by this order do what he could not do by regulations—repeal or annul the law? Can he thus defeat the law he was appointed to execute by making regulations, and then, by ordering his officers not to act under them, and not to act at all, place himself above the law and defy it? It is an error to suppose that the officers of the customs, including the Secretary, are, in regard to this law, created a special tribunal to ascertain and decide conclusively upon the right to drawback. Their function is entirely ministerial. The rights which the law gives cannot be defeated by the refusal of the collector to act, nor by his decision that no drawback was due. Neither the act of Congress nor any rule of construction known to us makes the claimant's right, when the facts on which it depends are clearly established, to turn upon the view which the collector, or the Secretary, or both combined, may entertain of the law upon that subject, and much less upon their arbitrary refusal to perform the duties which the law imposes upon them."

SALE—STOPPAGE IN TRANSIT—DELIVERY TO PURCHASER.

L bought goods in Manchester, England, of W. & Co., and gave instructions to ship the goods by rail, to be delivered to M. S. & Co., at Garston; and he, L, at the same time wrote to M. S. & Co. to ship the goods to Rouen, France. On the arrival of the freight at Garston, it was removed from the railway wagons to the company's sheds, and the usual notice was sent to the consignees, M. S. & Co., that the company no longer held the goods as carriers, but as warehousemen at the consignee's risk. M. S. & Co. wrote to L to inquire whether he required a bill of lading of the shipment to Rouen, and if not, they would ship them without one, and he replied that he did require the bill. Three days later, L filed his petition for liquidation in bankruptcy, and W. & Co. hearing this, immediately sent word to M. S. & Co., at Garston, to stop the goods if not shipped, and retain them for them as indemnity to protect them against liability, and the return was made. L had sold these goods to K, at Rouen, and he, K, brought an action against M. S. & Co. for the conversion of his property, claiming that the title to the goods passed to L, his vender, on their delivery to M. S. & Co., as his agents, at Garston, and that, therefore, the right to stop the goods in transit had ceased when W. & Co. demanded the return from M. S. & Co. In this action—Kendall vs. Marshall—the trial court gave the defendant a judgment, and the English Court of Appeals, on the plaintiff's appeal, decided in his favor. Lord Justice Cotton, in the opinion, said: "The rule is that the right to stop *in transitu* exists until the goods are delivered to the buyer, or possession has been taken by him. The difficulty arises always in determining what is a delivery to the buyer. To settle this question we must look to what paper passes between the buyer and seller before the goods are put in the course of delivery. If the buyer does not take the goods they must be sent by a carrier, and until the carrier has taken his freight to the point of consignment and handed them to the buyer, the right of the seller to stop them exists. The delivery to the carrier is not a delivery to the buyer, but when the buyers directs that the goods be sent to a certain point, the right of the seller to stop them remains until their arrival, unless the buyer comes in and interrupts their voyage. In this case, though the goods ordered by L, through his agents, M. S. & Co., to be sent to Rouen, were sent to Garston, the stoppage at Garston was not a mere break in the original journey; there was a full voyage from the buyer to his purchaser at Rouen, and the right of the vender to stop the goods ceased to exist when they reached G, and were delivered to M. S. & Co., who were acting under the orders of the buyer."

FALSE REPRESENTATION—RESCISSION OF CONTRACT—KNOWLEDGE OF VENDER.

In a sale of property the vender represented that no one had any claims upon it. He made this representation in good faith, and the purchaser relied upon it in making the contract. It turned out, however, that there were valid claims against the property which materially affected its value, and the purchaser gave notice that he withdrew from the contract. The vender insisted that he had sold in good faith, and that the purchase was *bona fide*. A suit was brought to rescind the contract—Linhart vs. Foreman, administrator—but the trial court decided in favor of the defendant. The plaintiff appealed to the Supreme Court of Appeals of Virginia, where he prevailed. Judge Hinton, in the opinion, said: "The well-settled doctrine in the United States in regard to contracts brought about by false or fraudulent misrepresentations is this—that a false representation of a material fact, constituting an inducement to the contract on which the purchaser had a right to rely, is a ground for a rescission by a court of equity, although the party making the representation was ignorant whether it was true or false, and the real inquiry is not whether the vender knew the representation to be false, but whether the purchaser believed it to be true, and was misled by it into entering into the contract. For in such case, whether the false representation was innocently made or knowingly made, the effect is the same upon the purchaser. And he who has made a false representation in respect of a material matter must, in order to be able to rely on the defense that the transaction was not entered into on the faith of the representation, be able to prove to a demonstration that it was not relied upon.

PARTNERSHIP—PURCHASE OF PARTNER'S INTEREST AT JUDICIAL SALE.

J bought the interest of a partner which had been attached for a debt, and subsequently to this attachment a chattel mortgage was made by all the partners for a firm debt. A controversy arose between J and C, the mortgagee—Clements vs. Jessup—in which the mortgagee prevailed. J appealed to Court of Errors and Appeals of New Jersey, where he was also defeated. Judge Depue, in the opinion, said: "The interest of a partner in the partnership property is only his share on a division of the surplus after payment of the partnership debts, and partnership property must first be applied to the payment of firm debts. A purchaser directly from a partner of his interest in the firm property acquires no title in the partnership property except the vender's share in the surplus after an accounting and adjustment of the partnership affairs. A sheriff having process of execution or attachment against one partner may seize and sell the latter's interest in the firm property; but a sale under such process will convey only the interest of the partner in the firm property after the debts of the firm are paid and its affairs are settled up.

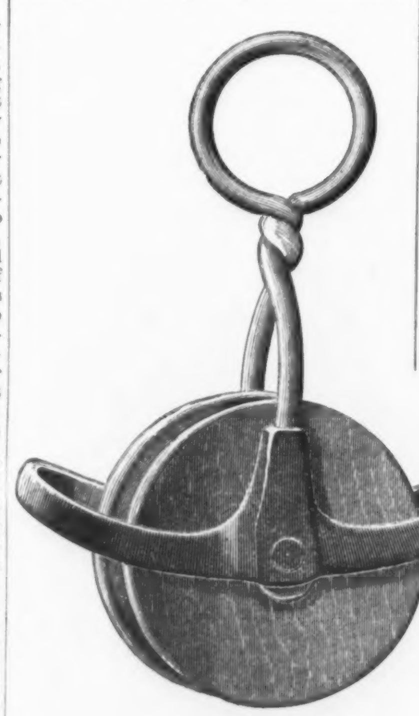
New Wrought-Iron Tackle Block.

A new wrought-iron tackle block has just been put on the market by Bagnall & Loud, of whom Lovejoy & Drake, No. 101 Reade street, in this city, are the general Eastern and Southern agents. It is designed to meet the demand for an exceedingly strong and durable block which will be adapted to even the severest uses, such as quarry and heavy contract work and railroad wrecking purposes. The special feature of this block, as will be seen in the accompanying illustration, is the application of the straps in such a way that any style of connection can be used, the same as with the regular wood shell, so that these blocks can be furnished with loose hooks, loose and stiff swivel hooks, lashing eyes, &c. It will be observed, also, as indicated in the cut, that with each partition is an inside strap through which the pin passes, thus equally distributing the strain, and, with the heavy iron sides and straps, securing very great strength. They are also so constructed, as indicated in the cut, that in case the hook or connection is broken it can be easily replaced by simply removing the pin and drawing the straps, while in other iron blocks the whole block must come apart before the damage can be made good. Other points made in favor of these blocks are that the shells have rounded edges to prevent the rope from chafing; that a larger diameter of sheaves—of from ½ inch to 1 inch—is given for the same size rope than any other iron block in the market; that the sheaves, which are iron, with deep polished grooves, are furnished common bushed, patent roller bushed, or metalline bushed, as may be desired; that sheaves are all interchangeable, steel pins only used, and that these blocks may be had with wooden partitions when wanted.

New Wrought-Iron Tackle Block.

Clothes-Line Pulley.

A simple article in the way of an awning or clothes-line pulley is made and sold by the same parties as the heavy block above described. It is represented in the accompanying illustration, which shows the full size of the pulley, and so clearly indicates its form and construction that little explanation is needed. The strap and pin are described as of steel wire, the guard malleable iron, the sheave lignumvitæ, and the whole capable of sustaining a load of 1000 pounds. The guard and the deep groove in the sheave are for the purpose of preventing the rope from running out or jamming. This article is specially intended for use as a clothes-line or awning pulley, but will be found adapted to other light work.



Clothes-Line Pulley.

A Great Oil Tunnel in Ohio.—The tunnel for lubricating oil is about to be driven at Mecca, Ohio, under the management of a company organized in New York, with Silas B. Dutcher as president. The oil is found in an area 15 miles in length by 5 miles wide. It is estimated that 500,000 barrels have been taken out by pumping wells at an average of 40 feet, which would represent, at its present value of $20 per barrel, $10,000,000. It has been demonstrated that a tunnel about 6 by 3 feet will pay to cut through a strata of shale that forms the division between two layers of sandstone, which has the appearance of maple sugar. The company have two square miles of territory in the heart of the best developed region, and should the yield be but one pint per running foot per day it would pay 33⅓ per cent. on the capital stock of $1,000,000. The tunnel will be 4 miles long.

Another Barb Wire Decision.

A dispatch from Joliet, Ill., dated October 9, contains the following:

Having dissolved the injunction of Lambert, Bishop & Co., restraining the Washburn & Moen Manufacturing Company from collecting royalty or interfering in any way with their business, Judge Stepp this morning granted a counter-injunction, prayed for by Washburn, restraining Lambert, Bishop & Co., on the ground of having exceeded the product stipulated in their license, and compelling them to pay the arrearage—some $60,000 royalty. The decision is regarded as a great victory for the Washburn & Moen interest, and will have the effect of stopping several barb wire factories in Joliet, which is one of the principal centers for the manufacture of that product in the country, and of throwing a large number of operators out of employment. The Judge rendered an oral opinion. In subsequent conversation he is reported to have said: "In my decision this morning I did not pass on the question whether the dealings and contracts of the Washburn & Moen Manufacturing Company and Haish had the effect to reduce the royalty payable to the other licenses, but hold that, in case this had the effect, the contract entered into on the 26th of October, 1882, between the Washburn & Moen Manufacturing Company, on the one part, and Lambert, Bishop & Co., of the other part, effectually released the Washburn & Moen Manufacturing Company from all claims of Lambert, Bishop & Co. and the wire-fence company for such reduction; therefore I dissolved the injunction of Lambert, Bishop & Co. and the wire-fence company against the Washburn & Moen Company, enjoining them from collecting the royalties. I also hold that the contract of Lambert, Bishop & Co. with the Washburn & Company, that they (Lambert, Bishop & Co.) should not manufacture any more barb wire until 1894, was a valid contract, entered into for a consideration; that it was not against public policy, and that the Washburn & Moen Company had no adequate remedy at law for its violation. I therefore granted an injunction against Lambert, Bishop & Co., restraining them from the violation of such contracts by the manufacturing of wire till the further order of this Court." The grounds set forth in the petition of Lambert, Bishop & Co. for an injunction were to the effect that Washburn had granted more favorable terms to Jacob A. Haish than he did the others, in violation of the stipulations of the licenses. The evidence shows that Lambert, Bishop & Co. had signed a supplementary agreement, waiving that part of the contract and admitting Haish on special terms.

The New Standard Metal Gauge.—The following table, which has been worked out by one of the principal ironmaking firms in the Birmingham district, shows the weights of the different gauges of iron sheets according to the new standard of the Board of Trade:

Thickness in inches.	Weight in oz. per sq. ft.	No. of Gauge.	Thickness in inches.	Weight in oz. per sq. ft.	No. of Gauge.
.30	192.00	1	.064	40.96	16
.276	176.64	2	.056	35.84	17
.252	161.28	3	.048	30.72	18
.232	148.48	4	.040	25.60	19
.212	135.68	5	.036	23.04	20
.192	122.88	6	.032	20.48	21
.176	112.64	7	.028	17.92	22
.160	102.40	8	.024	15.36	23
.144	92.16	9	.022	14.08	24
.128	81.92	10	.020	12.80	25
.116	74.24	11	.018	11.52	26
.104	66.56	12	.0164	10.49	27
.092	58.88	13	.0148	9.47	28
.080	51.20	14	.0136	8.70	29
.072	56.08	15	.0124	7.93	30

Registration of Night Signals.—Mr. William F. Coston, agent of the Coston night signals, makes the following announcement, based upon a letter from Secretary Folger, addressed to him: "The Secretary of the United States Treasury has concluded that for the interest of commerce a bureau for registration of signals of vessels be established at the Department in the Revenue Marine Division. Your co-operation is requested in obtaining the 'funnel-marks,' house flags and distinguishing night signal or signals. It is desirable to have the description as complete as possible with regard to colors, form and design, and it would be of great use if it were possible to furnish drawings of the same, that the registration may be more complete. All parties wishing to register their house flag, funnel-mark or distinguishing night signal or signals can do so by sending a drawing and description of the same to the office of the Coston Night Signal, 15 State street, New York, or to the Secretary of the Treasury, Washington, D. C. This information is desired to be used as a guide to mariners, and as an auxiliary to the Government services, viz.: Signal, Life-Saving, Lighthouse and Revenue Marine, that vessels may be known and reported by the same while passing the same at night or day time. It is proposed to publish this information for the benefit of whom it may concern, and will be distributed gratis where it will do the most good."

A marble monument has been erected to the late Alexander Macdonald, M. P., at Durham, England, and will shortly be unveiled by his friend and co-worker in the interests of the miner, Mr. Thomas Burt, M. P.

MANHATTAN HARDWARE CO.,

MANUFACTURERS OF

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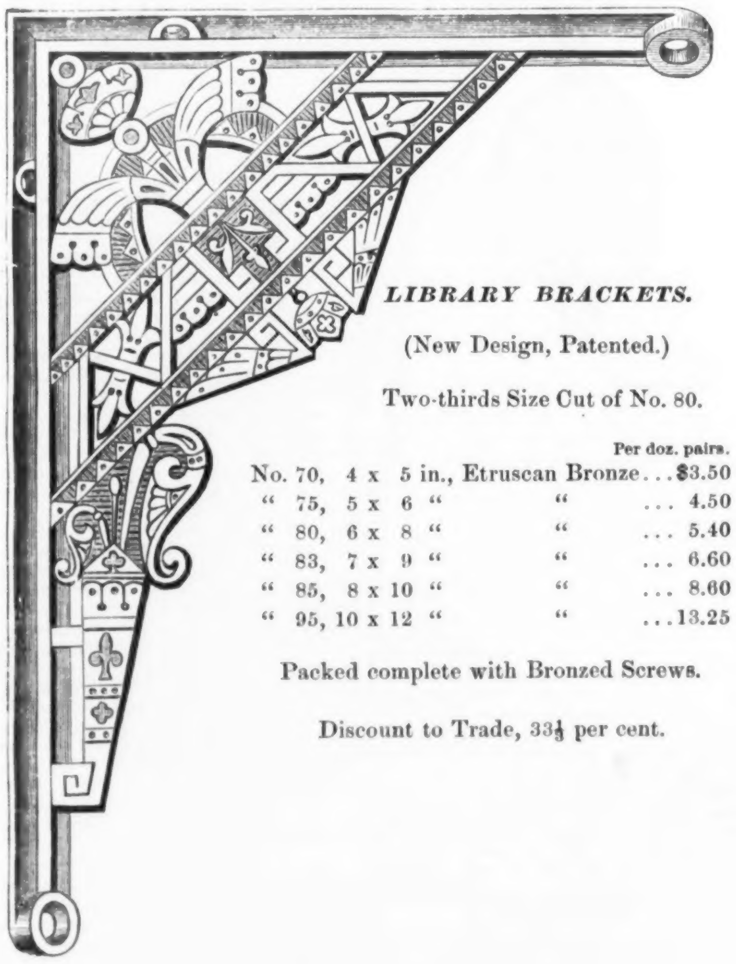
Sole owners and manufacturers of the **Patent Manhattan Self-Locking Blind Hinges, Patent Manhattan Blind and Shutter Bowers, Broughton's Patent Burglar Proof Sash Locks, Manhattan Patent Door Spring, Manhattan Patent Cupboard Catch, &c.,** and a general line of Builders' and Cabinet Hardware.



LIBRARY BRACKETS.

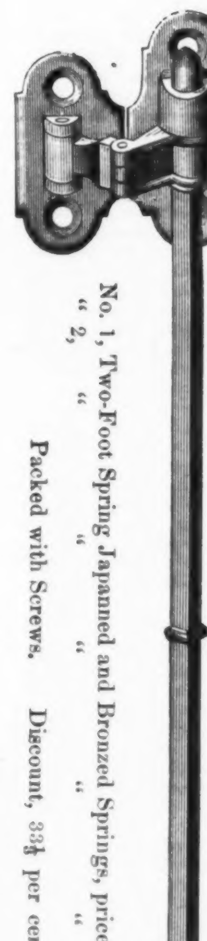
(New Design, Patented.)

Two-thirds Size Cut of No. 80.

			Per doz. pairs.
No. 70,	4 x 5 in.,	Etruscan Bronze	$3.50
" 75,	5 x 6 "	"	4.50
" 80,	6 x 8 "	"	5.40
" 83,	7 x 9 "	"	6.60
" 85,	8 x 10 "	"	8.60
" 95,	10 x 12 "	"	13.25

Packed complete with Bronzed Screws.

Discount to Trade, 33⅓ per cent.

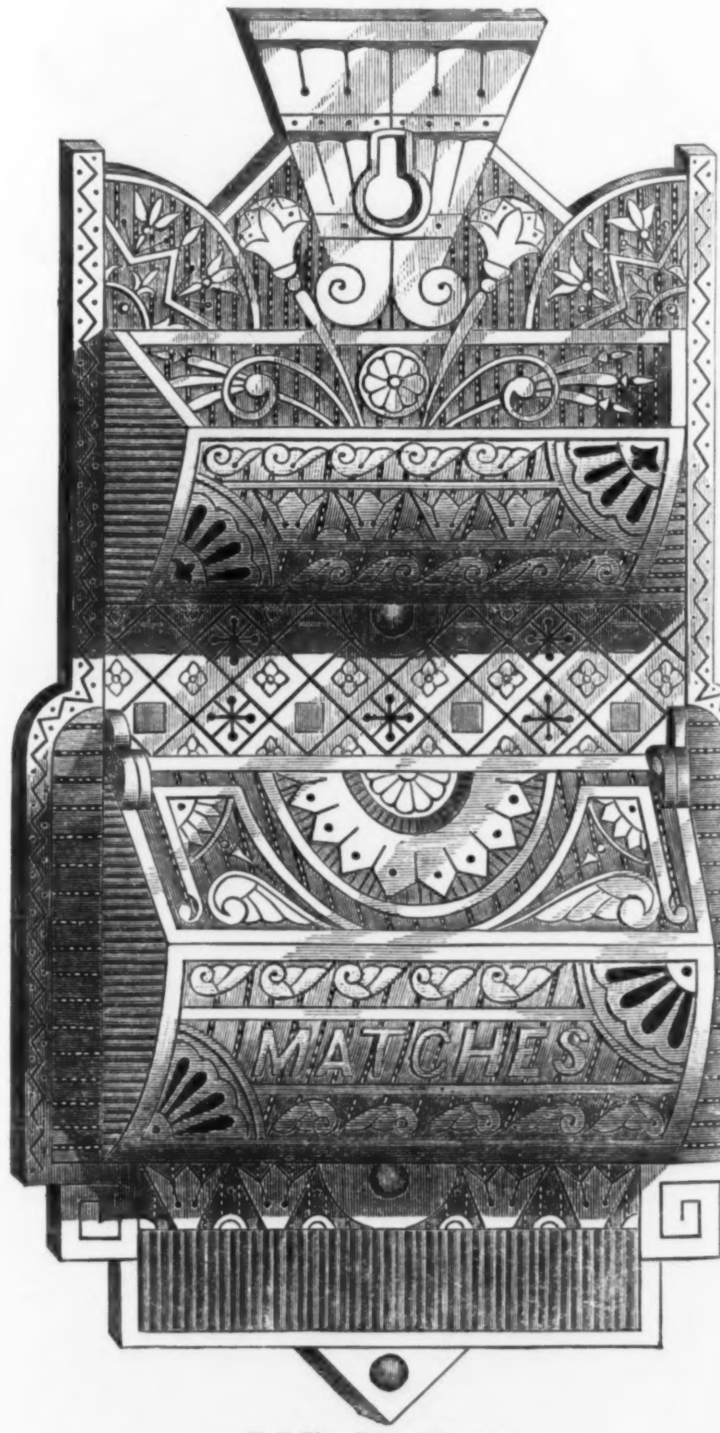


MANHATTAN PATENT DOOR SPRINGS.

Patented November 2, 1882.

No. 1, Two-Foot Spring Japanned and Bronzed Springs, price, per doz., $3.60.
" 2, " " " " " " " 7.20.

Packed with Screws. Discount, 33⅓ per cent.



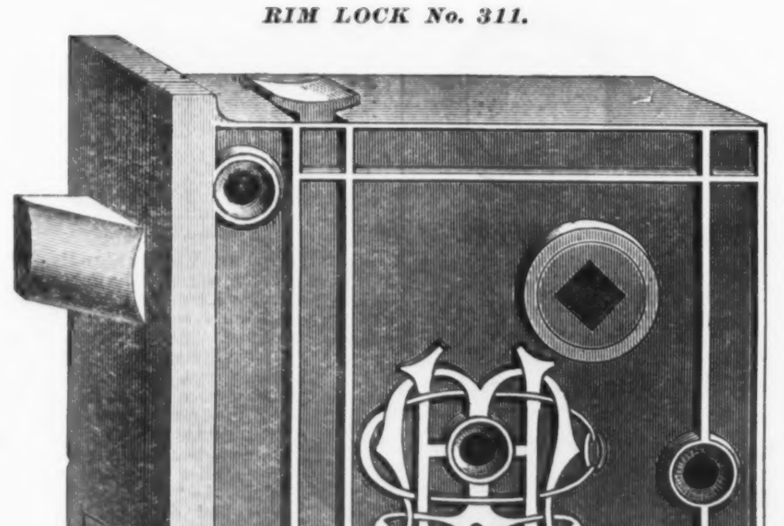
Full Size Cut of No. 380.

GROSSMAN'S PATENT MATCH SAFES.

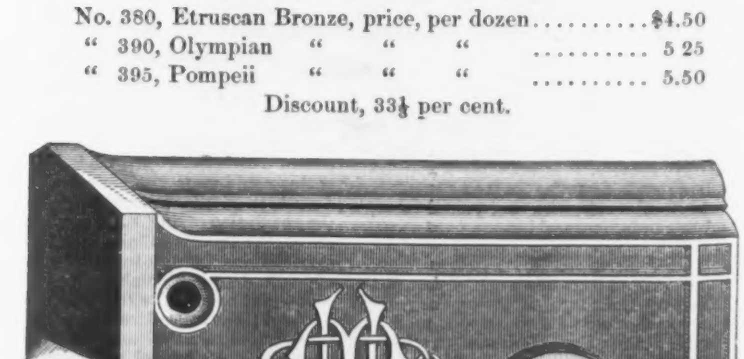
No. 380, Etruscan Bronze, price, per dozen $4.50
" 390, Olympian " " " 5.25
" 395, Pompeii " " " 5.50

Discount, 33⅓ per cent.

RIM LOCK No. 311.



No. 311, 4½-inch Rim, with Stop. Tinned Malleable Iron Key.
Price, per dozen, $3.60. Discount, 40 per cent. and 10 per cent.



Full Size Cut of No. 218.

HORIZONTAL RIM KNOB LATCH.

Price per doz.
No. 218, 2½ x 3⅜ in. Iron Bolts, Flush Malleable Thumb-Piece.... $2.00
" 219, 2½ x 3⅜ in. Iron Bolts, Brass Flush Thumb-Piece........ 2.25

MANHATTAN HARDWARE COMPANY,

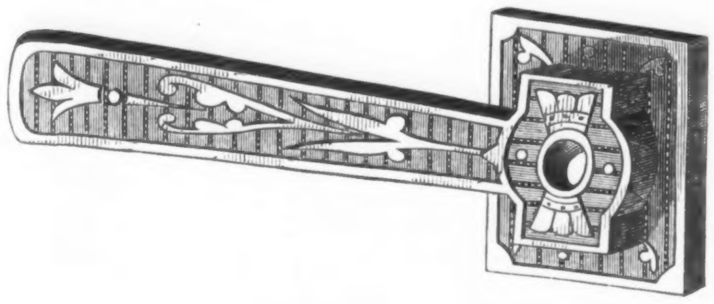
New York Office, 93 Duane Street. **READING, PA., U. S. A.**

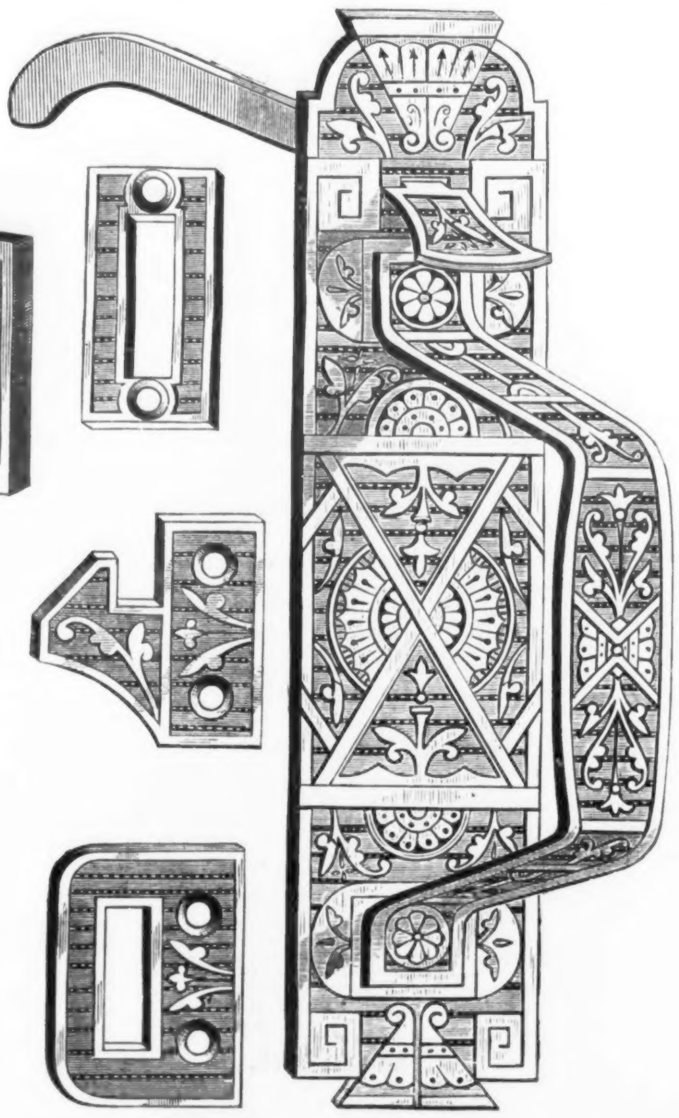
STORE DOOR HANDLE—OBLIQUE.

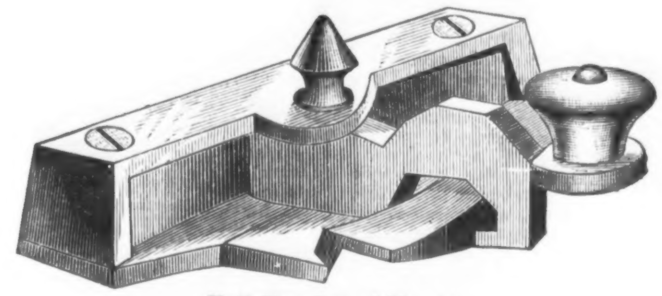
Two-thirds Size Cut of No. 139.

No. 139, Etruscan Bronze, per dozen................ $4.80
" 141, Olympian " " 5.35

Packed with Bronzed Screws. Discount, 33⅓ per cent.





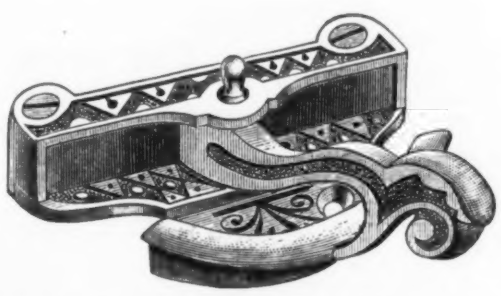


Full Size Cut of No. 66.

BROUGHTON BURGLAR-PROOF SASH LOCKS.

No. 66, Plain Brass, Polished and Lacquered, Porcelain Knob, per doz., $5.50.

Discount, 33⅓ per cent.

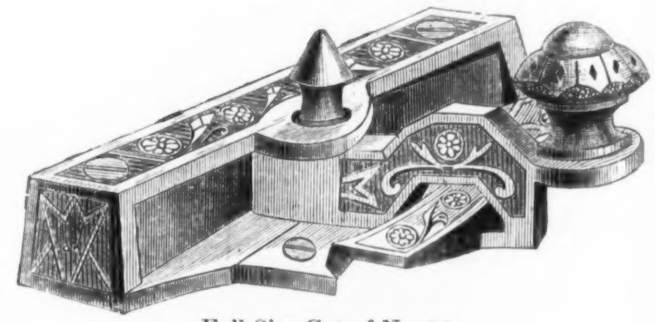


Full Size Cut of No. 6. (Patented October, 1879.)

BROUGHTON BURGLAR-PROOF SASH LOCKS.

No. 6, Etruscan Bronze, Flat Lever, per dozen, 60 cents.
" 7, Porcelain Knob, Bronze, per dozen......80 "

Discount to Trade, 33⅓ per cent.



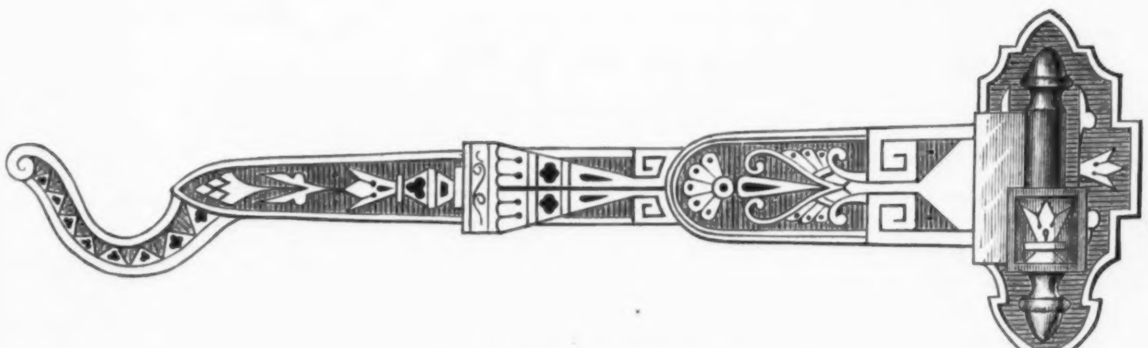
Full Size Cut of No. 80.

BROUGHTON BURGLAR-PROOF SASH LOCKS.

No. 80, Olympian Bronze, Genuine Bronze Metal Knob, per dozen, $2.

Packed with Bronzed Screws.

Discount, 33⅓ per cent.

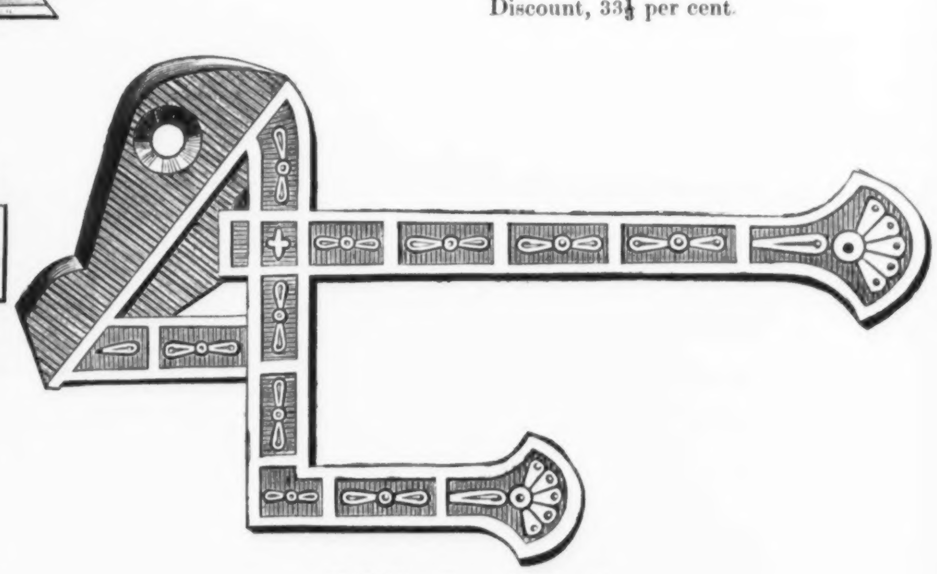


Two-thirds Size Cut of No. 160.

BIRD CAGE HOOK.

No. 160, 8-inch, Etruscan Bronze, per dozen, $2. No. 170, 10-inch, Etruscan Bronze, per dozen, $2.25.

Packed with Bronzed Screws. Discount, 33⅓ per cent.

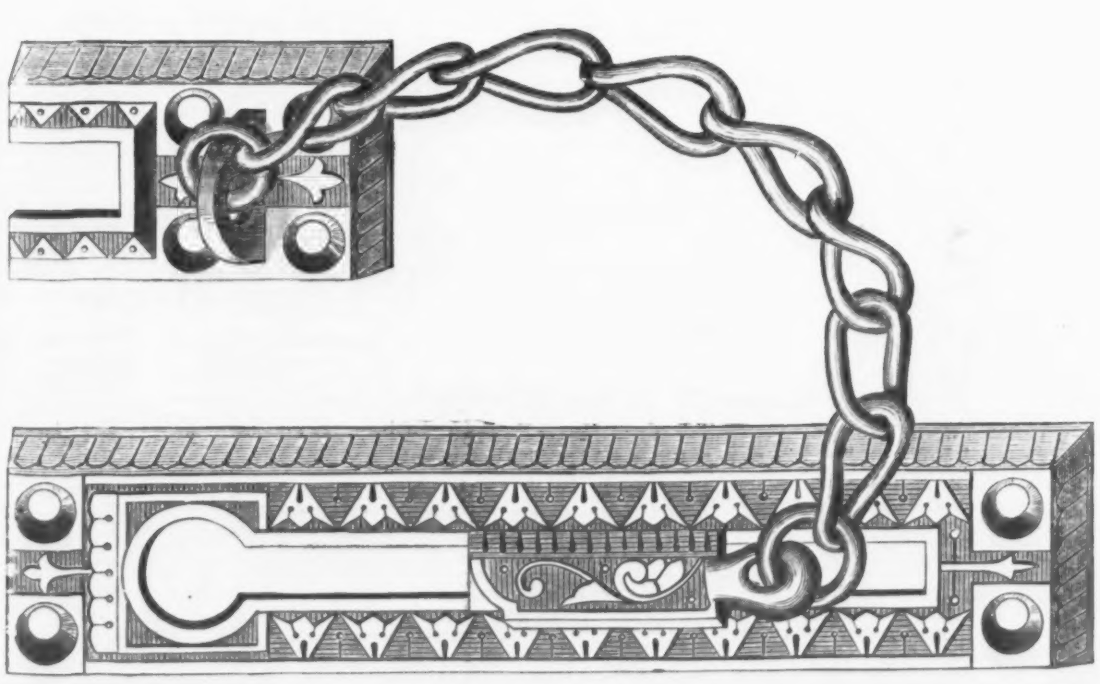


Full Size Cut of No. 290.

COAT AND HAT HOOK.

No. 290, Etruscan Bronze, per gross, $8. No. 295, Olympian Bronze, per gross, $8.50

Packed complete with Bronzed Screws. Discount, 33⅓ per cent.

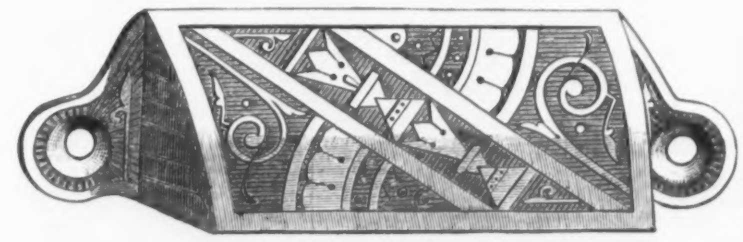


Full Size Cut of No. 220.

CHAIN DOOR FASTENERS.

No. 220, 6-inch, Etruscan Bronze, per doz., $4.50. No. 225, 6-inch, Olympian Bronze, per doz., $6.25

Packed with Bronzed Screws. Discount, 33⅓ per cent.



Full Size Cut of No. 42.

ORNAMENTAL DRAWER PULLS.

No. 42, Etruscan Bronze, per gross, $5.35
" 44, Olympian " " 6.10
" 45, Pompeii " " 6.10

Packed complete with Bronzed Screws. Discount, 33⅓ per cen

Full Size Cut of No. 47.

ORNAMENTAL DRAWER PULLS.

No. 47, Etruscan Bronze, per gross, $5.40
" 49, Olympian " " 6.15
" 50, Pompeii " " 6.15

Packed complete with Bronzed Screws. Discount, 33⅓ per cent.

Special Notices.

RECENT BOOKS.

Burr—Elasticity and Resistance of the Materials of Engineering. By Prof. Wm. H. Burr, C. E. Illustrated with diagrams, 753 pages, 8vo, cloth; 1883 . . . . . $5.

This work, from lectures delivered by the author at the Rensselaer Polytechnic Institute, is divided into two parts, the first part being purely mathematical, and treating of the general theory of elasticity in amorphous solid bodies; of thick, hollow cylinders and spheres, and torsion; of the energy of elasticity and the theory of flexure. Part second, or the technical division of the work, gives the experimental results derived from the preceding analysis. It contains chapters on tension, compression, shearing and torsion, bending or flexure, joints and miscellaneous problems. Specifications for many important bridges, lately constructed, are included, and there are remarks upon the fatigue of metals and the flow of solids. The work gives evidence of careful preparation, and the author's reputation as an engineer, and the success of his previous work on "Stresses in Bridges and Roof Trusses," should insure a wide circulation of this volume.

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HARDWARE and TABLE CUTLERY,

ON

Tuesday & Wednesday, Oct. 30th & 31st,

AT 10 O'CLOCK.

At 83 Chambers and 65 Reade Streets, New York.

This sale will comprise a large assortment of Hardware, Edge Tools, Files, Sash Fasts, First Quality Planes, &c., &c. Also, about 20,000 dozen Table Knives and Forks, Carvers, Butcher Knives, Pocket Cutlery, Plated Goods, &c. Full particulars in next week's *Iron Age.*

FOR SALE.

Nos. 2, 3, 6 and 7 Sturtevant Blowers; Nos. 2, 4, 32, 33 and 39 do. Exhausters; No. 2 Root Blower and No. 1 Baker do. (positive pressure); Vertical Engines, 2 x 4 and 2½ x 5; Horizontal do., 1¼ x 2½, 3 x 6 and 8 x 20; Planers, 29 x 29 x 5, 30 x 30 x 6 and 30 x 30 x 8; Hoisting Engines, 9 x 12, and 6 x 12, with boiler. Have you any Blowers, Engines, Boilers and Machine Tools, &c., to sell or buy? Send exact description to

C. R. BIGELOW, M. E.,
18 New Church Street, New York City.

Correspondence Solicited

with manufacturers of first-class Locks and General Hardware, for the sale of their goods in the principal Russian cities, by the subscriber, who has been in business in Moscow for a number of years.

Address, A. VAN DER SEE.
Rue Nikolskaia, Maison Tchigeff,
Moscow, Russia.

Wanted.

A Partner who can furnish from $3000 to $5000 for an interest in a well-established and well-paying Foundry in Dakota, which is new, running and doing a big business. The cost of fuel is very little above St. Paul rates, and Iron costs on an average 1¾ cents per pound. The iron can be made into castings for 2 cents, including cost of iron, and will sell for from 2½ cents to 6 cents. Reason for wanting partner is that the business is more than can be handled with the present capital. Address "M. E. R.,"
Box 1825, Fargo, Dakota.

Great Bargain.

An old and well-established Piping and Plumbing Business for sale, in a thriving town in Eastern Massachusetts. A good trade established, with plenty of work on hand; employs 12 to 15 hands. In connection with above, a thorough and established Steam Heating Apparatus, for which we have a complete set of Patterns. The town is at present putting in Water Works which will increase business. Address

"P. O. BOX 42,"
North Attleboro, Mass.

Rare Chance.

An exceptionally rare chance afforded energetic party to purchase retiring partner's interest in A1 Foundry and Manufacturing concern. Good trade established. Buildings, Machinery, Location, &c., absolutely first-class. Chance of lifetime to experienced party, or one desiring to commence business.

Address "METAL,"
Box 238, Norwalk, Conn.

WANTED,

by a competent business man, in any capacity, to invest $50,000 to $75,000 in some good manufacturing business that will pay 10 per cent. dividends and a salary of $3000 per annum. Nail or Barb Wire Fence preferred. Address X. X. X.,
Office of *The Iron Age*, 220 S. 4th St., Philadelphia.

Wanted

a practical Galvanizer; one who can take entire charge of shop. None but a first-class man wanted. Address W. X.,
Office of *The Iron Age*, 83 Reade st., New York.

SITUATION WANTED,—By a man, a position as Buyer or Salesman (in Store) in the Hardware Business. Have had 17 years' experience in the Hardware Business, and am well posted in General Hardware. Address, "G. S."
Office of *The Iron Age*, 83 Reade St., New York.

AGENT who has traveled over ten years among the Hardware Trade, selling goods, would like a situation after January 1st. Can give the best of reference as to ability, &c.
Address "A. B.,"
Office of *The Iron Age*, 83 Reade St., New York.

Wanted to Buy

or Rent, a Sheet Mill, within 20 miles of New York, easy of access. Cheap rent. With or without power. Address, "Box 406,"
21 Park row, New York.

SITUATION WANTED.

By a first-class Hardware and Metal Salesman. Known and traveled all over the United States and Canadas.
Address, "HARDWARE,"
P. O. Box 1271, New York City.

Special Notices.

LIST OF NEW MACHINERY FOR SALE.

1 Engine Lathe, 20 ft. bed, 42 in. swing.
1 " 18 " 36 "
1 " each 14, 16 and 18 ft. bed, 30 in. swing.
1 " each 10 and 12 ft. bed, 27 in. swing.
1 " each 8, 10 and 12 ft. bed, 23 in. swing.
1 " each 8, 10 and 12 ft. bed, 19 in. swing.
1 " 8 ft. bed, 18 in. swing.
1 " each 6 and 8 ft. bed, 16 in. swing.
1 " 6 ft. bed, 15 in. swing.
1 " 5 " 11 "
2 Iron Planers, to plane 10 ft., 30 x 30 in.
2 " to plane 7 ft., 26 x 26 in.
2 " to plane 4 ft., 22 x 22 in.
1 each 22, 24, 26, 30 and 38 in. swing B. G. S. F. Upright Iron Drills.
1 Shaper, each 10 and 15 in. stroke.
2 Shapers, each 12 in. stroke.
2 Bolt Cutters, to cut 1⅛ and 2 in.
Send for lists of new and second-hand Tools.

The Geo. Place Machinery Company,
No. 121 Chambers and 103 Reade Sts., New York.

TRUSTEE'S SALE OF Valuable Furnace and Coal Property.

I will offer at public outcry at the Court House in Steubenville, Ohio, at 1 o'clock P. M., on Wednesday, October 31st, A. D., 1883, the Steubenville Blast Furnace and Coal Property, situated at the west end of the Pan-handle Railroad Bridge over the Ohio River. This property consists of a Blast Furnace with capacity of 80 tons per day, with all necessary buildings, railways and machinery for a first-class Blast Furnace, all built in the most substantial manner, within eleven years, at a cost of $140,000. The Coal Property consists of 220 acres of two shaft veins of coal, each four feet in thickness, of good coking quality, and furnished with a shaft and railway tracks, cars, hoisting and pumping engines and machinery, at a cost of $40,000; all in good working condition, nearly new. Also 42 coke ovens, with railways to the shaft and furnace; 42 acres of land on which the above and other buildings are situated, will be sold as part of the property. The Stock House is connected by railway with the C. & P. Railway and the Ohio River. The Pan Handle Railway passes through the premises, and another railroad is located through them. It is believed that an abundant supply of gas can be obtained by boring on the premises, as it has been struck in the neighborhood. This property is worthy of the attention of persons proposing to engage in the steel or iron business, and will probably be sold at a great sacrifice. For further descriptions and terms, apply to the undersigned, at Steubenville, Ohio.

DAVID McGOWAN, Trustee.
October 10th, 1883.

For Sale.

A FIRST-CLASS JOBBING HARDWARE AND TINNERS' STOCK BUSINESS,

located in a Western city. Well established, profitable, capable of large increase. Satisfactory reasons for selling. All or part to be sold; small proportion of cash; balance on long time if properly secured. Address, for correspondence or personal interview,

"M., C. & C.,"
Office of *The Iron Age*, 83 Reade st., New York.

Valuable Iron Property for Sale.

An Iron Property in Central Pennsylvania on the main line of the Pennsylvania Railroad. Large bodies of Hematite and Fossil Ores, well developed. Modern appliances for the preparation of the Ores. Situated close to the coal seams of the Clearfield, Broad Top and Allegheny Mountains. Coke from Connellsville can be laid down at $2.35 per ton. A ton of Pig Iron can be made for about $13 per ton, exclusive of interest on plant. The property has one Charcoal Furnace and Forge, and an abundant supply of Timber for making Charcoal. Satisfactory reason can be given for selling. Apply, for further particulars, to

WM. DORRIS,
Huntingdon, Pa.

HARDWARE SALESMAN.

A party who has had a long experience as traveling salesman for Manufacturers of Hardware in the North, is now located in the South, and would be glad of an engagement to represent one or more good Manufacturing concerns in the market of the Southern States. Can give a part or the whole of his time, as may be desired; or would travel in the West or in New England if a suitable engagement offers. The best of reference can be given from former employers. Address

R. C. GRAVES, Marietta, Ga.

Hardware Business for Sale,

In one of the most thriving towns of Northern Michigan; two Railroads; good farming country. Stock fresh and clean; will invoice about $5000. Satisfactory reasons given for selling. Terms reasonable. Address

"HARDWARE, 27,"
Office of *The Iron Age*, 83 Reade St., New York.

WANTED.

IMPROVED HEAD FOR BOLT CUTTER.
Address "BOLT CUTTER,"
Office of *The Iron Age*, 83 Reade St., New York.

WANTED.

Steel to sell on commission in N. E. States.
Address "STEEL, Box X,"
Office of *The Iron Age*, 83 Reade St., New York.

POSITION WANTED.—A thoroughly practical Furnaceman is open for engagement. Is a first-class Mineralogist and Metallurgist. Educated, and has excellent credentials. Before signing a formal contract with party, he is willing to prove by his own work and character that he is a reliable man for such position. Address, "PRACTICAL FURNACEMAN."
Office of *The Iron Age*, 83 Reade St., New York.

WANTED—An interest in, or would accept position with, some Hardware firm, now or January, 1884, by a young man of experience and capital.
Address, J. Q. BRYCE, Jr.,
Steubenville, Ohio.

THE ADVERTISER, having had many years' experience in the Hardware business, and capable of selling goods on the road, or buying, is open for an engagement by the 1st of January. Parties wanting a competent man will address under "PLUCK,"
Office of *The Iron Age*, 83 Reade St., New York.

SITUATION WANTED as Superintendent of a Rolling Mill. Practical in all its branches; twenty-five years' experience; good references given if required.
THOS. O. HAMPTON,
59 W. Van Anden St., Auburn, New York.

WANTED—Situation by a Blast Furnace Manager who has planned, erected and managed works of the largest class; has been accustomed to the details and management of Mines, Railroads, and all official duties devolving upon a Resident Manager. Twenty years' experience; active and accustomed to work. Address "C. E. S.,"
128 West 120th Street, New York City.

A YOUNG MAN, 22 years of age, having had an experience of over 5 years in the Hardware business, desires a situation in some good house. Address
JOHN A. PEEBLES,
Somerville, N. J.

WANTED—By an experienced man, a situation as Manager of a Nut or a Nut and Bolt Factory or a partner to start such a factory. I own the patterns for the improved Pittsburgh Nut Machine, best in use. Address, "C. B.,"
Care of William Fisher,
24th and Smallman Sts., Pittsburgh, Pa.

Special Notices.

BARGAINS.

30-in. swing, 18 ft. bed, New Haven Lathe.
24-in. swing, 17 ft. bed, Bement, Marshall & Ball Lathe.
20-in. swing, 10 ft. bed, Perkins Lathe.
16-in. swing, 8 ft. bed, Hadley Falls Lathe.
16-in. swing, 6 ft. bed, Perkins Lathe.
16-in. swing, 6 ft. bed, New Haven Lathe.
23 in. x 9 ft. bed, New Haven Planer.
30 in. x 7 ft. bed, New Haven Planer.
12½ x 24 Horizontal Engine.
12 x 24 Horizontal Engine.
10 x 16 Horizontal Engine.
10 x 14 Horizontal Engine.
10 x 12 Horizontal Engine.
9 x 12 Horizontal Engine.
Two 8 x 12 Horizontal Engines.
7½ x 14 Horizontal Engine.
Two 7 x 10 Horizontal Engines.
5 x 10 Horizontal Engine.
8 x 10 Vertical Engine.
6½ x 8 Vertical Engine.
6 x 7 Vertical Engine.
6 x 6 Vertical Engine.
5 x 6 Vertical Engine.
4½ x 5 Vertical Engine.
4 x 4 Vertical Engine.
3 x 4 Vertical Engine.
10 Horse Portable on skids.
42 x 9 ft. Vertical Boiler, 88 2-inch tubes.
36 x 8 ft. Vertical Boiler, 66 2-inch tubes.
29 x 7 ft. Vertical Boiler, submerged tubes.
Two 30 x 6 ft. Vertical Boilers.
28 x 6 ft. Vertical Boiler.
24 x 5 ft. Vertical Boiler.
22 in. x 51 in. Vertical Boiler.
36 x 10 ft. Horizontal Boiler.
30 in. x 7 ft. 10 in. Horizontal Boiler.

A large assortment of all styles of Boilers, Engines, Belt Jumps, Shafting, &c., &c.
Write for prices and tell us what you want.

LOVEGROVE & CO., 152 N. Third St., Phila.

Wanted.

To buy a good stock of Hardware which will invoice about $5000, and which must be in a good live town. Western States preferred.

Address, "CASH,"
Office of *The Iron Age*, 83 Reade St., New York.

Wanted.

Oily Wrought Iron Turnings and Cast Iron Borings.

Name quantity, point of delivery and lowest price.
JOS. J. LIPPINCOTT & CO.,
131 So. Fourth St., Philadelphia, Pa.

AN OLD AND WELL-ESTABLISHED MANUFACTURING INDUSTRY,

using unequaled water power, located in one of the most healthful and prosperous cities of the West, now enlarging its business, will make room for an enterprising business man who can add $15,000 to $25,000 capital to that already employed.
Address, "DRAWER M.,"
Appleton, Wis.

Wanted.

500 TONS ROLL SCALE.
500 TONS FORGE CINDER, from Wrought Scrap in Charcoal Fires.
State lowest price and point of delivery.
"COMMISSION."
Office of *The Iron Age*, 220 S. 4th St., Philadelphia.

Wanted.

HEAVY CASTINGS AND ROLLS.

Wanted to buy Old Heavy Castings and Rolls of all kinds. Address
MATTHEW GILL, Jr., & CO.,
1240 N. 9th St. (below Thompson St.) Philadelphia.

CORRESPONDENCE SOLICITED

from parties intending to purchase Steam Riveters, Steam Hammers, Hydraulic Presses, Heavy Punch and Shears, &c., &c.
Estimates given for good work very low.
CONTINENTAL IRON WORKS,
Cor. 22d. St. and Washington Ave.,
Philadelphia.

Metal Exchange Memberships

Bought and Sold by
WM. WILLIS MERRILL,
4 Stone Street, Room 69.
Dealer in
EXCHANGE MEMBERSHIPS.

Wanted.

Competent Foreman, to take charge of Boiler Shop. Must thoroughly understand his business. To such a man a good place is open.
Address
M. GEARY, Manager,
Oil City, Pa.

Burnt Iron—Grate Bars, Cylinders, &c.

WANTED

to buy Burnt Iron of all kinds, in any quantity.
Address MATTHEW GILL, Jr., & CO.,
1240 N. 9 St., Phila.

Wanted.

By a Mechanical Engineer, thoroughly acquainted with construction and erection of Melting, Heating and Open Hearth Furnaces, Rolling Mills, General Machinery and Blast Furnaces, engagement with Iron or Steel Works.
Address "MECHANICAL ENGINEER,"
Office of *The Iron Age*, 83 Reade street, New York.

Engineer and Superintendent.

Situation wanted by a Civil and Mechanical Engineer—a graduate of an engineering school, who has had large and varied experience in designing, erecting and operating improved machinery for the manufacture of Crucible and Open Hearth Steel, Gas Furnaces for Heating and Melting, Buildings, Rolls for Special Shapes, &c. Satisfactory references.
Address, "ENGINEER, 78,"
Office of *The Iron Age*, 83 Reade st., New York.

A SWISS WHOLESALE MERCHANT,

who has traveling agents throughout Germany, Austria, Italy and Switzerland, desires to enter into direct connection with American Manufacturers of Hardware, especially of Agricultural Implements (Forks, &c.), Axes, Saws, Tools, Machines. Address offers to
"S. 3194 Z.,"
care of Haasenstein & Vogler,
at Zurich (Switzerland).
A1 New York references.

Special Notices.

BARGAINS IN SECOND-HAND MACHINERY.

The following *second-hand* Machinery, &c., will be sold cheap for cash or on time with proper security:

ONE ENGINE LATHE, 39 in. swing, 18 ft. bed.
ONE ENGINE LATHE, 23 in. swing, 16 ft. bed.
ONE ENGINE LATHE, 20 in. swing, 8 ft. bed.
ONE ENGINE LATHE, 20 in. swing, 9 ft. bed.
ONE ENGINE LATHE, 19 in. swing, 7 ft. bed.
ONE ENGINE LATHE, 18 in. swing, 21 ft. bed.
ONE ENGINE LATHE, 18 in. swing, 10 ft. 6 in. bed.
ONE ENGINE LATHE, 17 in. x 7 ft. bed.
ONE UPRIGHT BOR. AND TURN. MILL, 10 ft. 4 in. swing.
ONE LINCOLN MILLER.
ONE HAND MILLER.
ONE PLANER TO PLANE 31 in. x 30 in. x 6 ft.
ONE PLANER TO PLANE 34 in. x 32 in. x 12 ft.
ONE SHAPER, GOULD'S, 10-in. stroke.
ONE SHAPER OR COMP. PLANER, 10 in. st., 8 ft. 9 in. bed. Trav. Hd., 2 Tables.
ONE HAND LEVER PUNCH.
ONE LOT HEAVY POLISHING FRAMES.
ONE PRATT & WHITNEY 4-SPINDLE DRILL.
ONE GARVIN'S 4-SPINDLE DRILL.
ONE 24-IN. DRILL PRESS.
TWO 10-IN. HAND LATHES.
THREE NO. 1½ BLISS POWER PUNCHES.
ONE NO. 1 BLISS POWER PRESS, Heavy.
ONE NO. 31 BLISS POWER PRESS, Heavy.
ONE STILES 14-IN. DROP PRESS AND LIFTER.
ONE SQUARE BAR IRON CUTTER.
ONE DOUBLE-END POWER FORMING MACHINE, nearly new; suitable for Horse Shoes or similar work.
ONE LOT HORSE-SHOE STEEL DIES, cheap.
ONE 48-IN. PATERSON FORGE, complete.
LOT PULLEYS AND HANGERS.

Engines, Boilers, &c.

ONE 8 x 12 PORTABLE ENGINE AND BOILER. Good as new.
ONE 8 x 12 HORIZONTAL STATIONARY ENGINE. Nearly new.
ONE 10 x 12 STATIONARY ENGINE.
ONE 9½ x 12 IN. STATIONARY ENGINE.
ONE 8½ x 14 IN. STATIONARY ENGINE.
ONE 5 x 12 HORIZONTAL STATIONARY ENGINE.
ONE 10 H. P. VERTICAL ENGINE.
ONE 10 H. P. CYLINDER BOILER.
ONE 10 H. P. UPRIGHT BOILER.
ONE 12 H. P. LOCOMOTIVE BOILER. Nearly new.
ONE No. 0 STEAM PUMP.
ONE ACME STEAM PUMP.
ONE LOT 15 IN. SMOKE-STACKS.

Large stock of New Machinery, &c., at extremely low prices. If the list does not contain what you want, write us.

J. M. BADGER & CO.,
49 Dey Street, New York City.

36 INCH DRILL PRESSES

READY FOR DELIVERY.

E. L. HARRINGTON,
426 North 23d Street,
PHILADELPHIA, PA.

Engine and Pump For Sale.

The City of Lancaster, Pa., will sell at public sale at the Water Works on Thursday, November 1, 1883, at 2 P. M., one second-hand horizontal engine, 18 x 36, link motion. One pump, 10½ x 00, double-acting. One turbine water-wheel, made by E. Geyelin, 7 feet in diameter, with wheel chambers and iron penstock. Several large gear wheels, foundation plates, conduit pipes, large air vessels, large wheel shoe, bolts, &c. The engine, pump and other articles to be sold can be seen at any time on the grounds. Conditions of sale will be made known on day of sale.
By order of Water Committee.
JOHN T. MacGONIGLE, Mayor.

For Sale.

CAST IRON HOT-BLAST PIPES—THOMAS PATENT.

38 Hot-Blast Oven Pipes for Thomas Oven, in first-class order. Price, 1 cent per lb., cash, at our works. Size, 13 ft. x 9 inches. A bargain.
SHOENBERGER, SPEER & CO.,
Pittsburgh, Pa.

For Rent or Sale.

A first-class Rolling Mill situated between Pennsylvania Railroad and Pennsylvania Canal. Plant consists of two trains of rails, 18 and 9 inch, in first-class condition. Two heating furnaces and all other machinery pertaining to rolling mills in complete order. For further information, address, HUMMEL, FENDRICH & CO.,
Harrisburg, Pa.

For Sale.

A well-established and fine paying business in Stoves, Tin and Hardware; also, complete set of Tinners' Tools, in the liveliest city in Texas. Will reduce stock to suit buyer. Good reasons given for wanting to sell.
Address SNIDER & VREELAND,
Colorado City,
Mitchell Co., Texas.

Wanted.

To hear from the man who has best knowledge of Modern Machinery and Plant of a Wagon Axle Factory, and of best business habits, who is capable of managing men, to manufacture 500 to 1000 sets per day.
Address "L. R. R.,"
Axle Factory,
Office of *The Iron Age*, 83 Reade st., New York.

WANTED TO BUY FOR CASH.

A Fancy Hardware and Cutlery Business, with an established cash trade, well located in some large, growing city, east of Chicago.
Principals only need address, with full particulars, "B. W. N.,"
Office of *The Iron Age*, 83 Reade st., New York.

Wanted.

Bright, wide-awake, active young men, who are good salesmen and competent to figure on Iron Work of all kinds, and make estimates from Architects' plans. Must be good canvassers and energetic workers. For the right kind of men we have several places in Detroit, Mich., Chicago, Ill., and Windsor, Ont. Address, with full particulars,
E. T. BARNUM WIRE AND IRON WORKS,
Mention this paper. Detroit, Mich.

Situation Wanted.

Guide Roller open for engagement. Also capable of Turning Rolls. Address
"ROLLER—59,"
Office of *The Iron Age*, 83 Reade st., New York.

Special Notices.

New & Second-Hand Machinery, FEB. 21, 1883.

1 Engine Lathe, 14 in. x 5, 6, 7 and 8 ft. Grant & Bogert
1 " " 26 in. x 12 ft., Grant & Bogert. New.
1 " " 45 in. x 15 ft. Good order.
1 " " 96 in. x 12, 17 ft. New.
1 " " 42 in. x 14 ft. New.
1 " " 14 in. x 6 ft. Star Tool Co. New.
1 " " 15 in. x 6 ft. New.
1 " " 14 in. x 5 x 6 ft. New.
1 " " 16 in. x 7 ft. Bridgeport. New.
1 " " 13 in. x 5 ft. and 6 ft. Ames. New.
1 " " 16 in. x 6, 7 and 8 ft. Ames. New.
1 " " 18 in. x 8 and 10 ft. Lodge & Barker. New
1 " " 27 in. x 10 in. Lodge & Barker
1 " " 22 in. x 12 ft. New.
1 " " 20 in. x 10 ft. New.
1 " " 28 in. x 16 ft. New.
1 " " 24 in. x 12, 14 and 16 ft. New.
1 " " 11 in. x 4 ft. and 5 ft. Prentiss. New
1 " " 12 in. x 5 ft. Young. New.
1 Plain Engine Lathe, 16 in. x 4 ft. New.
1 " " " 15 in. x 4 ft. New.
1 Fox Lathe, 15 in. x 5 ft. Am. Tool & Machine Co.
1 15 in. x 4 ft. Turret Lathe. Lodge & Barker.
1 Fox Turret Lathe, 16 in. x 6 ft. Lodge & Barker. New
1 Planer, 50 in. x 50 in. x 17 ft. Good order.
1 " 32 in. x 32 in. x 7 ft. Good order.
1 " 16 in. x 16 in. x 3 ft. New.
1 " 22 in. x 20 in. x 5 ft. New.
1 " 24 in. x 24 in. x 6 ft. Hendey. New
1 " 26 in. x 26 in. x 7 ft. New.
1 " 16 in. Lever Table Drill. New.
1 Crank Planer, 16 in. x 16 in. x 13 in. New.
1 16-in. Upright Drill. New.
1 20-in. " Prentiss. New.
1 24-in. " Prentiss. New.
1 30 in. " Prentiss. New.
1 25-in. swing B. G. & S. F. Drill. Blaisdell. New
1 28-in. " " " " "
1 38-in. swing, B. G. & T. F. Drill. New.
1 15-in. Shaper. Gould & Eberhardt. New.
1 10-in. Shaper. Gould & Eberhardt. New.
1 14-in. Shaper. Hendey. New.
1 24 in. Shaper. Hendey. New.
1 24-in. Shaper. Hendey. Good order.
1 9-in. Shaper. Hewes & Phillips. New
1 9-in. Shaper. New.
1 14-in. Shaper.
Full Assortment of Milling Machines, Spindle Drills, &c., of Garvin's. New. Jones & Lamson.
1 each Nos. 2 and 4 Screw Machines, Wire Feed.
2 No. 2 Lincoln Millers. Good order.
2 No. 2 Lincoln Millers. New.
1 Hand Lathe, 12 x 4, 5 and 6 ft. New.
1 Hand Lathe, 16 in. x 6 and 7 ft. New.
1 Boring and Turning Mill, 50 in. New.
1 Boring and Turning Mill, 72 in., 2 Heads. New.
1 each 3 and 7 spindle Nut Tappers. New.
1 Gig Saw. Good as new. Rogers.
1 700-lb. Steam Hammer. Ferris & Miles. Good order

New York Agency of
THE TANITE CO. and GRANT & BOGERT MACHINE TOOL WORKS,

H. PRENTISS & CO., 42 Dey St., N.Y.

For Sale.

The Industrial Works of Shamokin, owned and successfully carried on for a number of years by the late Wm. Brown, deceased, consisting of Foundry and Machine Shop, and a large stock of Patterns regarded as part of the property. Boiler Shop, Blacksmith Shop and Factory for the manufacture of heavy coal screens. Well located in the borough of Shamokin, Pa., with the best facilities for shipping by rail, and surrounded by a district contributing all the work that a shop of that kind can possibly turn out. Easy terms of payment are offered to suit a purchaser of limited capital. For list of Tools and further particulars apply to

WM. McILVAIN & SONS,
Manufacturers of Boiler Plate and Tank Iron,
Reading, Pa.

For Sale.

One Granulator, with attachments.
One large Mixer, with attachments.
One No. 5 Vacuum Pump.
Two Sugar Packers.
The above is a portion of the Machinery formerly used at Baltimore Steam Sugar Refinery, Baltimore, Md. For information apply to
GEO. B. GRAHAM,
P. O. Box 689, Baltimore, Md.

For Sale.

A stock of Carriage Hardware in a city of 25,000 inhabitants; the only stock of the kind in the city. Is one of the best shipping points in the State; 6 railroads; has a good class of customers. Stock clean and in good condition. Good reasons given for selling. Address "B,"
Office of *The Iron Age*, 83 Reade st., New York.

Wanted.

OLD MALLEABLE SCRAP.
State lowest price, point of delivery and quantity.
SITES & GILL,
Dealers in Scrap Iron,
222 and 224 So. Third Street, Philadelphia, Pa.

For Sale—Lathes and Machinery.

15 in. x 6 ft. second-hand Engine Lathe, $175; 15 in. x 6 ft. Lathe, used two months, $200; 16 in. x 6 ft. new first-class Lathe, $275; 18 in. x 7 ft. new first-class Lathe, $330; 24 in. x 12 ft. new first-class Lathe, $500; Drill, and Lathe Chucks for same, very low. 20 in. Drill Press, new design, $100; 28 in. Back-geared Drill Press, new, $210; Planers, Planer Chucks, Hand and Power Presses, Nut Tappers, Bolt Cutters, Headers, &c.
S. M. YORK,
Cleveland, Ohio.

For Sale Cheap.

A No. 1 Engine, 12 x 10 inch stroke, very heavy bed plate, 11 ft. long; Fly Wheel, Shaft, Pulley, &c., complete. Engine, 8½ x 12 inch stroke, all complete. New Steel (Tubular) Boiler, 10 feet long, 36 inches diameter, Stack Front, &c., ready for use. Two large Steam Shears, suitable for Rolling Mill or Scrap Iron Yard Shears, Pipe, Tank, Boiler Plate and Rails, Iron or Steel; all fully geared, in working order. A great bargain. Address "OWNER,"
P. O. Box, No. 459, Pittsburgh, Pa.

Hardware Business For Sale.

In a large and rapidly growing manufacturing town in Western New York. An old-established business in the best location in town, with exclusive control of several leading articles in the trade. Proprietor's ill health the cause of selling.
Address "J. T."
Office of *The Iron Age*, 83 Reade st., New York

THE SALE OF

Hardware Specialties or other Merchandise suited to New England market—to parties in good credit or for cash—will be attended to by the subscribers. Send price list, with commissions allowed, to
B. D. WASHBURN & CO.,
Box 3465, Boston P. O.,
Mass.

STEAM FIRE ENGINE FOR SALE.

I offer for sale, at a low price, a Steam Fire Engine, made by Smith, of New York. It has an 8-inch Steam Cylinder, 8-inch Stroke and 5-inch Water Cylinder. This is a good chance for factories, villages or small towns needing a Fire Engine. Trial given to a responsible party intending to purchase. For particulars, apply to
THOMAS GLASSEY,
96 & 98 Plymouth St., Brooklyn,
Near the Fulton and Catharine Ferries.

For Sale.

Half-interest in an established Hardware Manufacturing business. Large profits and ready demand. Necessary capital, $10,000 to $15,000.
Address "MANUFACTURER,"
Office of *The Iron Age*, 36 Clark St., Chicago, Ill.

Trade Report.

BRITISH IRON AND METAL MARKETS.

[*Special Cable Dispatch to The Iron Age.*]

LONDON, WEDNESDAY, Oct 17, 1883.

Scotch Pig.—During the week a stronger feeling became manifest in the market, but it did not last, and prices now are barely steady. We quote makers' brands as follows:

Coltness,	alongside,	Glasgow	58/
Langloan,	"	"	57/6
Gartsherrie,	"	"	55/
Summerlee,	"	"	56/6
Carnbroe,	"	"	54/6
Glengarnock,	"	Ardrossan	54/
Eglinton,	"	"	48/6
Dalmellington,	"	"	48/6
Shotts,	"	at Leith	57/6

Lighterage from Ardrossan to Glasgow is 1/ ⅌ ton.

Cleveland Pig.—The market has been depressed the past few days by lots from second hands being thrown upon the market, and prices are now lower than when last quoted. We quote as follows, f.o.b. shipping ports:

Middlesboro'	No. 1 Foundry	43/
"	No. 2 "	41/
"	No. 3 "	39/ @ 39/3
"	No. 4 Forge	38/

Bessemer Pig.—There is no change to note, the market ruling dull at 49/ @ 50/ for W. C. Hematites, Nos. 1, 2 and 3, equal parts, f.o.b. shipping ports.

Blooms.—But little doing.

Manufactured Iron.—The market is steadier, the quarterly meetings just held having resulted in confirming present prices. We quote as follows, at works:

	£	s.	d.		£	s.	d.
Staff. Ord. Marked Bars	7	10	0	@	....		
" Medium "	6	5	0	@	6	15	0
" Common "	6	0	0	@	6	5	0
Hoops, 20 W. G. and over.							
" Common Best	7	0	0	@	7	5	0
" Medium	6	5	0	@	6	15	0
" Common	6	10	0	@	....		
Sheets, 20 W. G. and under.							
" Ordinary Best	8	15	0	@	9	5	0
" Common	8	0	0	@	8	5	0
Welsh Bars	5	5	0	@	5	7	6

Steel Rails—Are unchanged. We quote Ordinary Sections, £4. 15/ @ £5. 10/, f.o.b. shipping ports.

Iron Rails—But little business doing.

Old Rails.—The market is irregular. We quote Old Tees £3. 12/6 @ £3. 15/, and Old D. H.'s, £3. 15/ @ £3. 17/6, c.i.f. New York.

Scrap.—The market is quiet and unchanged. We quote Heavy Wrought, £3. 2/6, c.i.f. New York. Bessemer Crop Ends, run of the mill, are quoted 60/, f.o.b. shipping ports.

Copper—Is weaker and quotations are lower. We quote Best Selected, £67. 10/ @ £68, and Chili Bars, £61. 5/ @ £61. 15/.

Tin.—Prices continue to decline. We quote Straits Ingot, spot, £93. 10/ @ £94, and futures, £93. 5/ @ £93. 15/.

Tin Plates.—The market is firmer. We quote:

Tin Plates,	10 x 14,	1st qual.	Charcoal	19/6 @ 21/6
"	"	2d	"	"	18/6 @ 19/
"	"	1st	"	Coke	17/6 @ 18/
"	"	2d	"	"	16/6 @ 17/

Spelter.—The market is irregular. We quote Ordinary, at shipping ports, £15. 7/6 @ £15. 10/.

Lead.—The market is steady. Common English Pig is quoted £12. 7/6 @ £12. 10/.

Freights.—Steam from Glasgow to New York, 5/. @ 6/; Liverpool to New York, 4/6 @ 5/; Liverpool to Philadelphia, 5/ @ 6/6, and London to New York, 7/6 @ 9/6.

TRADE AND FINANCE.

Office of *The Iron Age*,
WEDNESDAY EVENING, Oct. 17, 1883.

Of the business outlook it may be said with confidence that it is much better than is generally described by commercial writers. Despite the lachrymose tone which in many quarters has become chronic, local trade is liberal in proportions, and in many lines of seasonable merchandise decidedly active. This is the testimony of prominent bank officers familiar with credits and mercantile affairs generally. Turning to the books, our informant, in one instance, pointed to the full line of deposits, unusual at this season, and reference was also made to the daily average of bank exchanges, which is kept up well to the maximum, despite the shrinkage of transactions on the Stock Exchange. Moreover, the demand for money indicates large preparations for the holiday trade, the statement being volunteered by customers in numerous instances that orders for goods are fully equal to those of former years. As a rule, the fall trade thus far appears to have been of satisfactory proportions. In the country at large the general expression is more moderate, but trade, as a whole, is admitted to be fairly active. Manufactures are not particularly so, and doubtless to a very special extent on account of the uncertain action of trades unions—inducing a hand-to-mouth policy, rather than engagements covering several consecutive months. In some directions the depressing influences acting upon breadstuffs and the provision trade have operated to check transactions. Wheat has continued to decline under the accumulation of stocks, in the absence of an export demand, and although prices have receded 20 @ 25 % since the "panic" of some weeks ago, there is nothing in the situation that augurs disaster. This week wheat sold at the lowest price for the season. Shipments of merchandise from this city to the interior, as well as by transportation lines coastwise, are reported at the several agencies to be fully up to those of a corresponding date last year. The number of business failures continues to be larger than usual, but are of a character having no special significance. The bank clearings of most of the leading cities continue to show a decrease, measured by the corresponding period last year, those for this city last week being 16.6 % less, and for 26 leading cities outside of New York 7.4 % less. But the bank exchanges can hardly be regarded as a fair criterion of current business.

The imports of foreign merchandise during the week were quite light, the total being but $6,992,190, or $1,581,681 below those of the previous week, of which $4,884,085 represented general merchandise, and the remainder—$2,108,105—dry goods. The receipts of coffee dwindled down to 1487 bags, and the imports of tea exhibit a falling off equally great. Since January 1 the imports aggregate $363,070,612, as compared with $399,896,229 for the corresponding period of 1882. The exports of specie amounted to $272,158, and the imports to only $7022. The exports of domestic produce from this port during the week were below the usual average, the total being $6,789,550, against $6,108,988 for the same week last year. Since January 1 the exports aggregate $281,911,681, compared with $268,261,335 for the corresponding period of 1882.

The action of the Bankers' Convention in passing resolutions favorable to the continuance of the national banking system, and calling for the discontinuance of silver dollar coinage beyond the amount required for business purposes, meets with hearty approval. Comptroller Knox's suggestion respecting the employment of foreign securities as a basis for bank circulation is at least open to criticism. The bank return for the week shows an increase of $75,925 in surplus reserve, which now stands at $2,165,075, against $1,855,400 at the same time last year, and $2,522,875 deficiency at the corresponding date in 1881. The loans show a gain this week of $1,867,800; the legal tenders are increased $1,327,100; the deposits other than United States are up $4,387,100.

Secretary Folger on Saturday issued the expected call for $15,000,000 of the 3 % Government bonds, interest on which will mature December 15th. The particular numbers called are as follows: $50, original No. 888 to original No. 971, both inclusive, and original No. 1304 to original No. 1307, both inclusive; $100, original No. 6041 to original No. 6719, both inclusive, and original No. 9451 to original No. 9464, both inclusive; $500, original No. 2565 to original No. 2926, both inclusive, and original No. 3978 to original No. 3979, both inclusive; $1000, original No. 17,042 to original No. 18,974, both inclusive, and original No. 22,636 to original No. 22,645, both inclusive; $10,000, original No. 25,659 to original No. 27,039, both inclusive; total, $15,000,000. The bonds described by the numbers mentioned are the bonds of the original issue, or their substitutes—*i. e.*, bonds which have been issued on the transfer in exchange for original bonds, and which bear an original as well as a substitute number. All of the bonds of this loan will be called by the original numbers only. Many of the bonds originally included in the foregoing numbers have been transferred or exchanged into other denominations on "waiver"—the original numbers being canceled and leaving outstanding the amount above stated.

Money is unseasonably plenty, but there is a very light demand from any source for commercial paper. We quote 60 to 90 days' indorsed bills receivable, 6 %; four months' acceptances, 6 @ 6½ %. Foreign Exchange is rather heavy, under considerable offerings of bankers' bills. Posted rates are $4.82 @ $4.85; commercial bills, $4.80 @ $4.80¼.

Government bonds closed as follows:

	Bid.	Asked.
U. S. 4½, 1891, registered	114⅜	114½
U. S. 4½, 1891, coupon	114⅜	114½
U. S. 4, 1907, registered	121⅛	121¼
U. S. 4, 1907, coupon	121⅛	121¼
U. S. 3 per cents	100	—
U. S. Currency 6s, 1895	129	—
U. S. Currency 6s, 1896	130	—
U. S. Currency 6s, 1897	132	—
U. S. Currency 6s, 1898	135½	—
U. S. Currency 6s, 1899	136	—

In State bonds, Tennessee 6s sold at 38¼ @ 38 for the old and at 36 for the new series.

On the Stock Exchange the week has been remarkable for violent fluctuations in prices and the general tendency to decline, culminating toward the close in a slaughter that bordered on panic. On Thursday and Friday the Texas Pacific, Villards and Vanderbilts were each the object of attack, the bears being in the ascendency, and on Saturday there was a partial reaction, which induced a temporary covering. On Monday the coal shares were assailed, on a report that the coal trade was bady demoralized, and the Oregon and Transcontinental declined heavily, also several other properties, due to an active selling movement. On Tuesday active bear tactics were renewed, with the effect of throwing several once favorite stocks into the lowest depths. Besides the Villard shares, Northern Pacific, St. Louis and other grangers suffered severely, under what was called "a system of terrorism." To-day like scenes were enacted, and the decline in prices was greater than on any previous day for several months, Oregon Railway and Navigation declining 7 % in the course of an hour, Canadian Pacific 4⅛, Oregon and Transcontinental 4. The principal dealings were in Lackawanna at 113¼; Oregon and Transcontinental at 39; Northern Pacific preferred 59⅛. St. Paul sold at 94⅛; Union Pacific at 86; Lake Shore at 97¼; Western Union at 77¾; Northwestern at 116⅞; Louisville and Nashville at 45¼; Erie at 28¼; Reading at 49; Jersey Central at 78¾; Missouri Pacific at 93; Canada Southern at 49½; Canadian Pacific at 53⅛. Afterward there was a partial recovery, but the market closed weak under a general pressure to sell.

The general markets are as indicated below:

In dry goods a large auction sale of blankets to-day went off at good prices, but jobbers speak of the market as dull. It is noticed that among commission merchants the question of credit is being considered, it being advised that the placing of goods on memoranda for any purpose whatever, either to avoid dating ahead or to circumvent any established rule, should be discontinued; also that the practice of granting buyers' options should be abolished. Coffee is strong on a basis of 12¢ for fair cargoes of Rio. There is continued weakness in cotton, and quotations for spot are reduced. Manila hemp is 10⅞ @ 11. Hides are quiet; in leather a steady movement. The provision trade is light. Lard is offered down to 7½¢ for city. Sugar is firm and quiet, on a basis of 6¾¢ for fair refining. Tobacco is held at strong prices. Petroleum is very quiet; exporters slow buyers. Wool is steady, but without improvement. In freights the market is strong, mainly for breadstuffs and petroleum, and there is a fair movement of cotton from the South. Grain freights are backward.

The reports made to the Comptroller of the Currency of the condition of the 48 national banks in the City of New York at the close of business on Tuesday, October 2, 1883, show: Resources and liabilities, $457,217,563. Among the latter is included capital stock paid in, $50,350,000, and among the resources, $50,274,173 in specie, of which $8,253,701 is gold coin and $436,421 silver coin. Excess of reserve, $4,074,399; proportion to liabilities, 26.53 %.

The Chancellor of New Jersey holds, in the case of the Mechanics' National Bank of Newark, which was ruined by a dishonest cashier, that the directors neglected their duties, and consequently can be sued by the stockholders, whose interests were thus left unguarded.

The gross earnings of 68 roads during September, as compiled by the *Chronicle*, were not very flattering in their results. The total for the month was $27,300,282, an increase of only 8 % over a year ago, the gain in mileage in the same period being about 9 %. The increases in Canadian Pacific and Northern Pacific are explained by the new mileage.

MINING STOCKS.

The closing quotations for mining stocks were as follows:

	Bid.	Asked.
American Flag	11	12
Belle Isle	35	45
Bodie	50	70
B., H. & E., new	75	1.00
Bradshaw	21	....
Barcelona	26	....
Caled. B. H	25	....
California	15	20
Climax	8	9
Con. Imp	3	8
Con. Va	50	52
Chrysolite	1.10	1.20
Central Ariz	....	30
Cherokee	2	....
Dunkin	25	....
Decatur	3	4
Eureka Con	....	5¾
Elko Con	3	4
Father de Smet	3.50	4.00
Grand Prize	50	....
Great Eastern	1	2
Great Mountain	65	....
Gold Stripe	....	6
Hukill	5	7
Harlem	92	93
Hortense	9	....
Independence	....	45
Iron Silver	2.95	....
Lacrosse	....	15
Leadville Con	22	....
L. Pitts	64	69
L. Chief	57	64
N. Standard	16	20
N. Belle	....	4.90
N. Belle Isle	45	....
Rappahanock	7	8
Robinson Con	40	....
Rising Sun	....	3
Red Elephant	5	....
Standard	5¾	....
Silver Cliff	5	10
Sierra Grand	1.00	1.10
Sutro Tun	17	....
Sonora Con	24	....
Unadilla	1	....
Pipe Line cer	1.10⅝	1.10¼

GENERAL HARDWARE.

There are indications of a somewhat better condition of things in the market. Orders continue moderate, and the trade is unquestionably below what is expected at this season, the Hardware business sympathizing with other branches and being affected by the general financial condition of the country. Still we hear from one and another source of an increase in trade, in some cases slight, but in others of more importance, indicating a better feeling in the country. In some lines there is, as there has been for some time, a good deal of cutting in prices, and large buyers can get good figures, but there is on the part of prudent manufacturers a disposition not to force sales by sacrificing goods, preferring to hold them rather than break the market at this season—a disposition which is strengthened by the fact that in many lines of goods they cannot afford to sell below present prices, which are so low that when a demand sets in they are expected to advance. The specially encouraging feature in the situation is that buyers are cautious, and, so far from overstocking, are carrying as small a stock as possible. This leaves the dealers, as a rule, in a sound and fairly comfortable financial condition.

The active movement in Nails continues, and the demand is still up to the capacity of the factories. More confidence is being placed in the maintenance of prices, now that it seems to be assured that Western

factories will close for 30 days, beginning early in November. At the meeting of the Atlantic States Nail Association in this city last Thursday it was decided to be inexpedient to close Eastern factories at the time selected by the West, but there was a general belief that a stoppage some time during the winter, probably in January, would not be strongly opposed. A resolution was adopted in the nature of a pledge not to sell any Nails west of the Alleghenies during the stoppage of the Western factories. The nominal price for Nails is still $3, but the ordinary base price is $2.90, subject to the usual allowance for large lots. Western Nails are not being sold here now.

There is no change to note in the Barbed Wire trade, except that orders are not quite so numerous as they were, the season being pretty well over. Prices are very firmly maintained in this section at the combination rate of 7¼¢ per pound in ordinary quantities, but 6¢ to buyers of large lots.

Rumors which have been in circulation concerning the financial condition of the Howe Scale Mfg. Company, of Rutland, Vt., culminated last week in the report that the company was about to wind up its affairs. Inquring at the office of the company in this city, Page, Dennis & Co., agents, we were informed of the facts in the case. The company has been in trouble, which at one time threatened disaster, but these difficulties have been met by a reorganization and by the election to its new board of managers of men of wealth and business standing in the State of Vermont. The reorganization took place ten days ago, John B. Page being elected president in place of George A. Merrill, resigned. The board of managers now comprises John B. Page, George S. Studwell, William R. Page, John W. Cranton, Rockwood Barrett and John A. Sheldon. This board took immediate charge of the large plant in Rutland and appointed W. R. Page, superintendent, and Mr. Sheldon, treasurer. Mr. Cranton is a large real estate owner, a member of the firm of Dun & Cranton, and is said to be one of the wealthiest men of Rutland. Mr. Sheldon has long been associated with Mr. Barrett, a leading lawyer of that State, in the marble works of Rutland. We are informed that they are both men of wealth, and possess exceptional business ability. It is reported that the new board will have all the backing that it needs from a combination of wealthy gentlemen, and the general belief is that the company has been established on a sound financial basis, and is now in shape for the large and growing business which it is doing. The agents of the company here report that orders are coming in well, some good shipments having been made to foreign ports.

Glass is very firm at 70 per cent. discount and all desirable stock is scarce. Some descriptions cannot be supplied, especially Doubles. Stock from Europe is arriving slowly. Pittsburgh is considered out for the rest of the year, and as the works in New Jersey are full up to January 1st, the prospect of immediate relief is not encouraging. The demand thus far has been from the West, but now a demand is springing up in the East.

We have received the following communication concerning the condition of the market in the line of Tinware and Stamped goods. We are not at liberty to give the name of the writer, but assure our readers that it is from a house whose position gives weight to their views. It will be of interest as corroborating the statements made in our last issue, while at the same time it enters into the causes which have produced the present demoralization:

Editor of The Iron Age.—DEAR SIR: Your inquiry of the 5th inst. at hand. The market on Tin goods is so utterly demoralized that we issue no price lists—no discount sheets. This demoralization is made possible by the skinned Tin Plates so freely brought here from abroad, and converted into wares by the unscrupulous. The products of this poor grade of Tin Plate bear the same name that belongs to a good article. The jobber is most at fault for the scattering of these goods, for were it not that he buys them, they would not be made. The consumer is the greatest sufferer, for he does not obtain half the value of his money. We adhere to old methods and make good goods for the few who desire and inquire for them. Much Stamped Ware is sold as low as 70 per cent. discount from the regular (so called) Manual list. Sometimes we hear of lower prices than this. Now, it is a fact that on a fair quality of goods, 60 and 10 per cent. discount is a loss to the manufacturer. Whoever sells a fair quality of Stamped Ware at lower than 60 and 5 per cent. off is a loser, if he be a manufacturer. We think it can be demonstrated that these concerns manufacturing Stamped Ware, who have the smallest capital invested, are the ones who make the poorest goods and sell the lowest. Good houses are often obliged to meet the "Cheap John" prices and furnish good goods, the loss being partially made up on the other lines which yield something of a profit.

The trouble which has led to such a state of things was born of the Tinware Association. Great bitterness was engendered by actual or fancied wrongs. When this association went to pieces some resolved to lose fabulous amounts of money to wound the pockets of the others. The pride, as well as the pockets, of the older and more respectable concerns was assailed. They could take no back seat. If others would sell goods at less than cost, they must shape their business to save to themselves their customers. They have done so, until now no manufacturer of Stamped Wares who sells in large quantities a fair quality of goods gets as much as the goods cost him—hardly more than he pays for the raw material.

We promptly tell inquirers for prices that they can buy goods of the same name lower than of us, and frequently name the parties we allude to. The cutting on prices of some Painted goods is fully as sharp. Inexperience, working with capital not its own, in an endeavor to build up a trade thus jeopardizes its creditors and poisons the business. The reasons assigned for the condition of the above classes apply with equal force to the Pieced Tinware business. But underlying the whole is the fact that the supply is far beyond the demand. When such is the case in any trade, every resort is in order—the meanest raw material, the meanest goods, reduced sizes, goods with the life, so to speak, taken out of them, are common. "Cheap John" wants them. Bridget buys without noticing the quality. Respectable retailers must defend themselves, and they get the same. So are the goods scattered. We do not make such goods and do not publish prices of those we do make. If parties order our goods without named prices, we at once quote before sending the goods. We are surfeited with complaints that our prices are not as low as can be bought of others. While our trade in some lines falls off, the aggregate of our business is equal to past years. We think the tendency of prices is downward, and will be until new concerns conclude that the old ones cannot be wiped out, or until many fail, which a day not far distant will determine.

You publish manufacturers' prices to jobbers. Your paper is everywhere. The smallest retail buyer sees your quotations and demands his one sheet of Copper at the price you name. He will not be convinced that his demand is unjust. The jobber, standing between the manufacturer and retailer, is left no margin of profit. Prompted to maintain his position, he sells, profit or no profit. And so the fight goes on, and will go on until the result of the Kilkenny cat fight is illustrated. We know of no remedy. Combinations are impossible. Distrust underlies all the relations in the trade. Each manufacturer counts himself the best man, and maintains it at any sacrifice.

The general accuracy of this view will be acknowledged by those who are best informed as to the condition of the trade, and our correspondent has done no injury to the interests of business in general, or of his special line, in thus giving the bottom facts. Most of them have been familar to well-informed buyers, and if the whole truth has not heretofore been told, it has been pretty well understood by those who take an inside view of the market. But apart from that, in the present unhealthful condition of this branch of manufacture and trade, with the reckless competition of which all the makers complain, and the consequent production of cheap and cheapening goods, it is better that the situation be seen as it really is and its evils frankly acknowledged. In present circumstances it will be the part of wisdom for the trade to insist on the production and sale of good, honest goods. Manufacturers must avoid the temptation to meet a demand for low priced, by giving inferior, goods. They must regard their name and standing as of more importance than the securing of unremunerative orders. Dealers, out of regard for their customers, must discriminate between good and poor articles, and be no more willing to sell "Cheap John" Tinware as of good quality than they are to sell a low-grade German pocket knife for a genuine Rodgers. It is short-sighted policy for them to buy the inferior goods, even though they get an extra 10 or 12½ per cent. discount.

As regards the quotations given by *The Iron Age*, we have only this to say: Every manufacturer knows we do not publish the prices at which he sells to jobbers. We give the prices at which the leading goods are in actual trade sold to regular retail dealers. If they are in some cases lower than a figure at which the manufacturer or jobber would desire to make a given sale, it is simply because, under a lively competition the goods, are sold on a small margin. The reason why—to recur to the extreme case suggested by our correspondent—the hardware dealer is able to buy his one sheet of copper from A. at a given price is because A. knows that if he does not sell it at that figure B. will. *The Iron Age* is not responsible for this competition; its duty as a trade paper is simply to give the facts. That its impartiality and accuracy are admitted by manufacturers and wholesale and retail dealers is an acknowledgment of its fidelity and usefulness.

The general condition of the market in Tinware, as it has already been described, is given by another maker, who writes us: "Under the present demoralization of the Tinware trade, it would be impossible to give you price of Tin and Stamped-Ware. All sales are governed by circumstances, no two manufacturers selling at the same price. This condition has induced many manufacturers to seek for cheap material, and hence large quantities of inferior goods are being placed upon the market, much to the injury of standard goods. The demand is fair; no large purchases; all are buying as their trade demands; no speculative feeling exists."

Matthai, Ingram & Co., Baltimore, manufacturers of Tinware, in consequence of the destruction of their factory by fire, in August, have been unable to execute large orders, but advise us that they have been filling a great many orders from small dealers. They report a large demand for their Patent Pieced Goods, which they are making preparations to manufacture on a larger scale. Their discounts to the trade are as follows:

Goods in Section 1, pages 6 to 24........dis. 25&10 %
Goods in Section 2, pages 26 to 54........dis. 30&10 %

Stamped goods they sell from a net list.

We have received from Sidney Shepard & Co., proprietors of the Buffalo Stamping Works, Buffalo, N. Y., their new catalogue of October 1, 1883, which is a revision of, and supersedes all, previous lists. It exhibits their well-known line of goods, including their late additions. Discounts from this new list are as follows:

Page	Discount.
1 to 9, Deep Stamped Ware	60&10 %
10 to 21, Shallow Stamped Ware and Trimmings	60&10 %
22 to 23, Pierced Tin Ware	60 %
34 to 43, Japanned Ware	25&10 %
44 & 45, Tin Toys	25&10 %
46 to 54, Toilet Ware	25&10 %
55, Bathing Apparatus	33⅓&10 %
56 & 57, Miscellaneous Goods	25&10 %
58, Perforated Tin	20&10 %
59, Buffalo T. K. Handles, Ears and Spouts	net
60, Spoons, Flesh Forks and Cake Turners	50&10 %
61 & 62, Pokers and Shovels	45&10 %
63, Coal Hods, Black	37½&10 %
63, Coal Hods, Galvanized	45&10 %
64 to 74, Coal Vases	30&10 %
75, Zinc Stove Boards	70 %
76, Four-Piece Elbows	net
76, Wire Ring Pot Cleaners	20 %
77, Dripping Pans	6¼¢ ℔ net
77, Fry Pans and Stove Skillets	70 %
78, "Novelty" Transportation Cans	15&10 %
78, "Iron Jacket" Oil Cans	20 %
79 to 82, Buffalo Champion Ice Cream Freezers	50 %
84 to 91, Water Filters and Water Coolers	25&10 %
92, Gate City Stone Water Filters	33⅓ %
93, Milk Cans and Fixtures	20 %
94, Creamery Pails and Trimmings	net
Deep Stamped Ware, Seconds	70&10
Deep Stamped Ware, Extra Seconds	70 %

Note.—All Seconds and Extra Seconds are retinned.

The Detroit Block Works, B. Meeker, proprietor, and the Michigan Block Works, George S. Adams, proprietor, have recently been consolidated under the name of the Detroit Block Works, George S. Adams, proprietor. Their place of business will be from 52 to 58 East Atwater street, Detroit, and Graham & Haines, 113 Chambers street, in this city, who have been the agents of the Detroit Block Works, will continue to represent the consolidated concern.

We are in receipt of the new catalogue of the McNab & Harlan Manufacturing Company, 56 John street, this city, manufacturers of Boiler Tubes, Iron Pipe and Fittings, Brass and Iron Valves, Cocks, &c., for steam, water and gas, as well as of Boilermakers' and Gas-fitters' Tools and Plumbers' Materials. This catalogue is a large folio of more than 300 pages, descriptive of this line of goods and fully illustrated. Many goods have been added to this catalogue which were not in their last, and on this account the numbers and figures by which they were designated have been changed. We have no changes in price to note.

The Covert Manufacturing Company, West Troy, have recently put on the market a new Bull Snap, especially designed to be used on Bull Leads. It is cast with a screw extension and shoulder, which permits it to be used on any handle. With each Snap is packed a ferrule, the necessary screw-eyes and a cord to be used in constructing a Bull Lead. The list price is $4 per dozen. The company also continue making the Lytle Bull Lead, which is already known to the trade.

The importers, in common with the domestic dealers, feel the influence of the present dullness in the market. The impression gained from interviews with them is that the trade for the past season has been fair, as far as import orders are concerned, but that there has not been the usual or anticipated demand for goods from stock. This indicates, in their judgment, that dealers in the interior are not disposing of their goods as satisfactorily as they expected. The Cutlery trade has, however, in some of its branches, been more active than was anticipated. In fine goods there has been about the same demand as last season, and the past week or two has brought an increase of orders. There is no change in prices to mention, except that with Ivory goods the tendency continues upward on account of the constantly enhancing value of Ivory.

The trade in Guns and Gun Fixtures has been light, most of the dealers having a stock on hand from last season.

J. & Riley Carr, of Sheffield, England, represented in this city by H. A. Belcher, 30 Cliff street, are making arrangements for the introduction of some new goods especially adapted to the American market. They are now offering Patent Welded Iron and Steel for Lawn Mower Knives and Cutters, Shoe Die Cutters, Plane and Machine Iron and Knives, &c., and will soon put on the market bright Cold-rolled Steel Strips for Band Saws. They have also begun the manufacture of a new double-faced Horseshoe Turning Hammer with cross pane. This Hammer, which is made of the best Tool Steel, combines the Farrier's Turning Hammer and the Horseshoe Turning Sledge. They are also introducing a Farrier's Knife, American pattern blade, but with a beechwood handle.

Montgomery & Co., 105 Fulton street, have just issued a new catalogue of 336 pages, which is fully illustrated with cuts of the varied line of imported goods that they sell. It gives prices and full descriptions of Stubb's Files, Tools and Steel, Grobet's Swiss Files, Chesterman's Measures, Magnets, French Emery Paper, their new patent Bench Micrometer, of which we give a description in another column, making a volume of interest and value to purchasers of the most delicate tools, such as are used by silversmiths, jewelers, electricians, engravers and fine machinists.

Bagnall & Loud, manufacturers of Pulley Blocks, &c., of whom Lovejoy & Drake are the general agents, at 101 Reade street, in this city, have recently put on the market a new Wrought-Iron Tackle Block, of which we give a description on another page. Their list, which, it will be observed, differs from others, is as follows:

Rope.	Chain.	Sheaves.	Single.	Double.	Triple.	Quadruple.
Diam						
⅝		3½ x 1	$2.00	$3.20	$3.90	$4.60
¾		4 x 1⅛	2.65	3.90	4.80	5.70
⅞	3-16	4¾ x 1¼	3.40	5.00	6.40	8.50
1	¼	5⅛ x 1⅜	4.60	7.00	9.00	11.70
1¼	5-16	6 x 1½	5.30	7.75	9.85	13.00
1½	⅜	8 x 1¾	6.50	11.50	14.75	21.50
1¾	7-16	9½ x 2	9.00	17.00	23.00	30.00
2	½	10 x 2¾	14.30	23.50	33.40	43.50
2¼	9-16 or ⅝	11 x 2¾	24.50	37.00	50.00	68.00
2½	⅝ or ¾	12 x 3	33.50	57.75	74.00	89.50

Discount on foregoing list, 35 %.

Their new Clothes Line Pulley they quote $12 per gross, subject to a discount of 25 per cent.

The following communication has been received by us for publication:

PHILADELPHIA, PA., October 10, 1883.

We have this day appointed Messrs. Durrie & McCarty, 97 Chambers street, New York, our agents, and have placed with them a full line of our goods for immediate delivery. Our friends may rely on getting from them at all times our lowest factory prices.

Yours truly, YERKES & PLUMB.

A meeting of the manufacturers of Lawn Mowers was held in this city on the 15th instant. The following houses were represented:

PENNSYLVANIA LAWN MOWER COMPANY.
GRAHAM, EMLIN & PASSMORE.
EXCELSIOR MANUFACTURING COMPANY.
MAST, FOOS & CO.
CONTINENTAL LAWN MOWER COMPANY.

We are authorized to state that it was decided to leave the list of 1883 unchanged, and that the discount for the season of 1884, should be 30 and 5 per cent., and 3 per cent. for cash.

We quote Hotchkiss' Sons Steel Traps, discount 60 per cent.; and the New Haven Copper Company's Auger Bits, for which Graham & Haines, 113 Chambers street, are sole agents, at discount 60 and 10 per cent.

In the statement of the list and prices of Skates manufactured by Robert Gibson, of Birmingham, Conn., which we published two weeks ago, the Shirley Skate was classed with the Metal Top Skates as subject to a discount of 33⅓, when it should have been put with the Wood Tops, at discount 25 per cent.

The business in Pumps continues fair, the trade of the summer having been satisfactory, the generally dry weather promoting business in this line. The demand from the home market has fallen off somewhat within a week or two, but a good many goods are being exported. Prices remain without material alteration.

The "Perfect" Coat and Hat Hook, manufactured by Alcott & Smith, New Britain, Conn., for whom Graham & Haines, 113 Chambers street, are the sole agents, is already favorably known to the trade. It is made under Alcott's patent, and is a simple device for a Coat and Hat Hook, with a guard arm on the Hat Hook. There has been a reduction in price, the list being as follows:

No.	Inch Hook.	Per gross.
1, Plain Iron, Japanned	3	$10.00
2, " "	3½	11.00
11, " Copper Bronzed	3	10.80
12, " "	3½	11.80
4, Figured Iron, Amber Br'z'd.	3½	15.60
		Per doz.
5, Figured Iron, Nickel Plated.	3½	2.10
20, " Genuine Bronze	3½	6.00
30, Figured Bronze with black Matting	3½	6.84

From this list a discount is made of 50 and 25 per cent.

The Union Hardware Company, Torrington, Conn., whose New York office is 75 Chambers street, have just made a new Patent Gun-Cleaning Rod. It has telescopic joints, made of Wrought Brass, in which the thread is rolled, and not cut, giving a thread on both sides. This secures it to the wood on the inside, and on the outside to the receiving brass joint, into which it screws with a corresponding thread. The price is $4.75 per dozen.

The advertisement of the Manhattan Hardware Company, which occupies two pages of our present issue, together with their similar announcement of a fortnight ago, will call the attention of the trade to some of the Hardware specialties which they manufacture, such as Broughton's Burglar Proof Sash Locks, Blind Hinges, Ornamental Cabinet and Library Brackets, Store Shelf Brackets, Frame Pulleys, Rim Locks, Grossman's Patent Match Safes, Horizontal Rim Knob Latches, Store Door Handles, Bird Cage Hooks, Chain Door Fasteners, Coat and Hat Hooks, Drawer Pulls, &c. The discount and price of each article can be found on reference to their advertisement.

The following is the list of the Morris Sash Locks, made by the Morris Sash Lock Company, Cincinnati.

No.	Per doz.
00, Iron, Plain Japanned	$1.50
0, " " "	1.75
1, " " " Brass Tip	2.25
2, " " " Nickel-plated Tips	2.75
3, Plain Polished Bronze	7.50
4, " " " Nickel-plated	10.00
04½, Iron, Tucker Bronze, small size	3.00
4½, " " "	3.00
5, Ornamental Iron, Tucker Bronze, Real Bronze Drop and Tip	4.50
6, Ornamental Real Bronze	10.00
7, Extra Heavy Plain Polished Bronze, with Burglar-proof Plate	18.00
8, Same as No. 7, Nickel-plated	24.00
9, Ornamental Real Bronze, Dark Inlaid	10.00
10, " " " Antique Finish	10.00
11, Plain Polished Real Bronze, Antique Finish	10.00
12, Ornamental Real Bronze, Silver-plated	18.00
13, Plain Polished Iron, Boston Finish	5.50
14, Extra Heavy Ornamental Real Bronze, with Burglar-proof Plate	18.00
15, Same as No. 14, Dark Inlaid	18.00
16, Very Heavy Plain Polished Bronze, for Extra Heavy Sash	24.00
17, Same as No. 16, Nickel-plated	30.00

Discount, 40 per cent.

Their goods are sold in this city by Horace F. Sise, 100 Chambers street.

IRON.

American Pig.—A decided curtailment of production is in progress, but it remains to be seen whether it will be carried far enough to cause a scarcity of Pig Iron. Evidently nothing short of that point will produce the desired effect on buyers. This should be a very active month, but so far it has been one of the dullest months of the year, and the dullness seems to be the result of an indisposition of buyers to lay in their usual winter supplies, believing that ultimately they will be able to buy Pig Iron at much lower prices. This market seems to be the least active in the country, as we hear of a considerable movement in other localities. It has been even duller than ever for the greater part of the past week, and on Tuesday, the 16th inst., the Thomas Iron Company reduced its price for Foundry Pig to $20.50 for No. 1, and $19.50 for No. 2, at which prices 1000 tons were sold. Some of the other companies have followed the example thus set, but others so far refuse to acknowledge any disposition to meet the market, preferring to withdraw their product from sale if they cannot get the old rates. Some small lots of Iron have been sold besides those referred to above, but they do not aggregate any considerable quantity. It is rumored that 5000 tons of No. 2 have been bought at $19 for speculative purposes. We revise our quotations as follows: No. 1 Foundry, $20.50 @ $21.50, with sales of special brands at various figures up to $23; No. 2 Foundry, $19 @ $20; Gray Forge, $18 @ $19. The following prices for 100-ton lots of Pig Iron, immediate delivery, for cash, are quoted us by furnace sales agents, lighterage in New York harbor being 60¢ ℔ ton, which should be added to Hoboken or other tidewater prices:

NO. 1 FOUNDRY.	
Hudson (free of lighterage at New York)	$22.75
Carbon (Elizabethport delivery)	21.00
Thomas (Hoboken delivery)	20.50
Bushong (tidewater)	23.00
Olcott (at furnace, Albany)	21.50
GRAY FORGE.	
Durham (tidewater)	$18.75
Pequest (tidewater)	18.75
Musconetcong (tidewater)	19.00

Scotch Pig.—Arrivals are very light, inquiries are few and sales are small. Greater firmness in prices is reported from the other side, in consequence of the stoppage of some furnaces, labor troubles and the tendency among furnacemen to run on Hematite Pig rather than on Foundry. We quote as follows: Coltness, $23.25 from ship; Summerlee, $22.50 to arrive, and $23 from ship; Shotts, $22.75 @ $23 from ship; Langloan, $23.25 from ship; Gartsherrie, $23 from yard; Glengarnock, $22 from ship, and $22.50 @ $23 from store; Carnbroe, $22 from ship, and $22.50 from store; Dalmellington, $21 from ship, and $21.50 from store.

English Pig.—There is no movement in Bessemer, though it is offered at $20.50. American Bessemer can be purchased at $20 @ $21, delivered, which is considerably below the cost of foreign.

Spiegeleisen.—We hear of no new business, but learn that 20 % can probably be had as low as $30.

Bar Iron.—Trade moves in the same retail way, and nothing of an unusual nature has occurred. Possibly there is less doing than was the case a week ago, and prices are a shade weaker. There is no quotable change, however, and Refined Iron sells at $2.25 @ $2.40 from store, and $2 @ $2.20 at mill; Common Iron, $2.10 @ $2.20 from store, and $1.85 @ $1.90 at mill.

Structural and Shaped Iron.—Sales are about up to the average, and prices are unchanged, as follows: Beams, 3.5¢ on wharf for round lots; Angles, 2.6¢ @ 7¢ from store; Tees, 3.5¢ from store.

Plate Iron.—Business is dragging generally, although in some quarters considerable activity is noted. Quotations are: Common, 2.6¢ @ 2.75¢; Refined, 2.75¢ @ 3¢; Shell, 3⅛¢ @ 3¼¢; Flange, 4⅛¢ @ 4¼¢; Extra Flange, 5¢ @ 5¼¢.

Sheet Iron.—Trade is fair, but there is no special activity. We quote: 3.1¢ @ 3.3¢ for Nos. 10 to 16. Lighter sizes are quoted in our New York Wholesale Price List.

Steel.—The past week was not quite so favorable as its predecessor, though some houses report a slightly increased volume of sales. We continue to quote American Tool Steel at 11¢, with concessions to large buyers; Crucible Machinery, 6½¢ @ 7¢; Bessemer and Open-Hearth Machinery, 4¢ @ 5¢; Steel Plates, 5¢ @ 6¢, with extra for special sizes; English Tool Steel, 15½¢.

Wire Rods.—Business is very dull, and there is a general disposition to doubt the report which comes across the Atlantic to the effect that a large order for Steel Rods has been placed in Germany by an American house for delivery in the last three months of this year.

Steel Rails.—We note sales of 16,000 tons, as follows: 10,000 tons on private terms; 3000 tons at Pittsburgh, at $37, spring delivery; 1000 tons at an Eastern mill, at $38.50, early delivery; 2000 tons at a Western mill, at $40.50, spring delivery. Inquiries for large lots have been received. We quote $37 @ $38 at mills in Pennsylvania, for winter delivery. There are rumors of sales below these figures, but we are unable to trace them to a reliable source. It is asserted by the representatives of Steel works stationed in this city that $37 is the lowest price at which Steel Rails can be bought. The leading mills positively refuse to sell at any lower figure.

Old Material.—Trade continues very dull, the only movement reported being in Light Scrap, which commands $17 from yard. Cargo lots of mixed stock are offering, but are meeting with slow sale at $23 @ $23.50. No. 1 Wrought is held at $24 for Selected from yard, with $25 asked for very choice. Boiler Scrap is quoted at $25. Old Shoes are held at $28. A sale of 500 tons of Old Rails is reported to have been made near here at $21, and 200 tons at $22.50. A fair quotation for New York delivery is probably $21.50 @ $22.50.

TRANSACTIONS ON THE NEW YORK METAL EXCHANGE.

We are reported the following transactions on the New York Metal Exchange from Wednesday noon of last week to Wednesday noon of this week:

WEDNESDAY, October 10.—Second Call.

No transactions.

THURSDAY, October 11.

No transactions.

FRIDAY, October 12.

25 tons Straits Tin, last half Jan.......... $0.20⅝

SATURDAY, October 13.

50 tons Straits Tin, Sept.-Oct. ship....... $0.20½

MONDAY, October 15.

200 tons American Pig, No. 1, Jan.......... $20.00
25 " Straits Tin, Aug.-Sept. ship...... .20½

TUESDAY, October 16.

50 tons Straits Tin, Oct.-Nov. ship....... $0.20⅝

WEDNESDAY, October 17.

100 tons American Pig, No. 1, Jan........ $20.00
100 " " " " " 20.00

These transactions in Pig Iron aggregate 400 tons. On Thursday, October 11, for "spot" lots of Thomas No. 1 Pig Iron, $20.50 was bid and $22 asked; for January delivery, $20.50 was bid; for January delivery of Crane No. 1, $20.50 was bid; for January delivery of Allentown No. 1, $21 was bid.

METALS.

Copper.—There is a rumor than an arrangement has been made between the Lake companies and manufacturers interested in the pool expired, to extend the same for the rest of the year to the amount of something like 8,000,000 lb, supposed to be at 15¢. While this is said, sales have summed up, besides, a couple of hundred thousand lb at 15⅛¢, other brands being worth 14⅜¢ @ 14¾¢. From London, Best Selected came the last few days £67. 10/, and Chili Bars, £61. 10/. We are cabled thence to the following effect to-day: "Market weaker and quotations lower. Best Selected, £67. 10/ @ £68, and Chili Bars, £61. 5/ @ £61. 15/." Manufactures may be quoted as under: Bottoms, 24¢; Braziers, 24¢; Sheathing, 22¢, and Bolt Copper, 24¢.

Tin.—Our market has been excessively dull during the week, and Straits Tin has been sold as low as 20¾¢ on the spot, while 110 tons, October shipment, sold at 20⅜¢. L. and F. is nominally worth 22¢. London had declined to £93. 10/ with Straits Tin this morning; we are wired from there this afternoon: "Prices continue to decline, Straits Ingot, spot, £93. 10/ @ £94, and futures, £93. 5/ @ £93. 15/." Singapore is down to £93. 10/, cost and freight per steamer to New York. Shipments from the Straits settlements, October 1–15, have been to England 500 tons, and to the United States 150 tons. *Tin Plates*—Have been moderately active. We quote at the close, large lines, ordinary brands, ℔ box: Charcoal Bright, $5.70 @ $5.87½; do. Ternes, $5.37½ @ $5.50; Coke Tin, $5 @ $5.10, and do. Ternes, $4.75. Liverpool is remarkably firm, production barely sufficing the demand now and prospectively. They quote thence per cable: Charcoal, 18/6 @ 20/, and Coke, 16/6. We are told per cable from London that the market is firmer.

Lead.—Some 400 tons Common Domestic sold from $4.20 down to $4.12½, including 150 tons at the latter figure. *Refined* would not bring to-day over $4.15. St. Louis, after a sale of 500 tons Soft at $3.90 (equal to 4¼¢ here), is weak at $3.90, Soft, and $3.85, Hard. From London we are cabled to-day that there is no change in the market. Manufactures are quoted as follows: Lead Pipe, 6¼¢; Sheet Lead, 7½¢; Tin-lined Lead Pipe, 15¢ ℔ lb, and Block-Tin Pipe, 45¢, less the usual discount to dealers.

Elsewhere in this issue there appears a letter from Messrs. J. H. Ackerman & Co., of this city, on the cost and price of Lead, in which the accuracy of statements in our report in the Lead market for the previous week are questioned. In that report we said: "The Richmond Company declined to sell the other day, although 7000 tons are believed still to be held by the company, while Pueblo is understood to hold as much, and Omaha 5000 tons." Pueblo was "understood" by the best authorities in the trade to hold that much. As our correspondents are doubtless in possession of better or later information, we accept the correction. We are also indebted to them for the facts which they send us regarding the cost of Lead production. Concerning these figures, we can only say that at the time of the great decline they allude to, Common Lead went down to 2¾¢, and several hundred tons were shipped—if we are not mistaken—to China. If the production of Lead in this country is sustained at the average of the past two years, there is no good reason why the metal should not decline to as low a figure again. We certainly cannot consume it all. We fully agree with our correspondents that "if the price of Lead goes anywhere near exporting prices, close up the mines and cut off production." But it is scarcely probable that the owners of Argentiferous Lead mines will stop producing because the Lead, after desilverization, may be worth only 2¾¢ at New York. While the extraction of Silver from Lead having Silver ores remains profitable, a higher or lower price for the by-product will not be taken into consideration.

Spelter and Zinc.—The market here remains decidedly flat at 4½¢ for Common Domestic, and 5⅛¢ Silesian. The advance in Europe exercises no influence whatever on this side, there being for the moment a total absence of demand. We receive from London the ensuing cablegram: "Market irregular. Ordinary, at shipping ports, £15. 7/6 @ £15. 10/." We quote Bertha Refined, 7¾¢ @ 8¢, and Bergenport, 9½¢. *Sheet Zinc* is moderately active at 5¾¢ @ 5⅞¢. *Antimony* has been dull at 9⅛¢ for Hallett, and 10¼ @ 10½¢ for Cookson.

EXPORTS

Of Hardware, Iron, Machinery, Metals, &c., from the Port of New York, for the week ending October 16, 1883.

	Quan.	Val.
Danish West Indies.		
Ptlm., gals	3758	424
Nails, kegs	30	225
Mf. iron, pkgs	40	212
Ag. imp., pkgs	28	307
Sew. ma., cse	1	31
Hdw., pkgs	9	194
Pumps, pkgs	2	40
Bremen.		
Hdw., pkgs	15	174
Ptm., gls.	1,019,948	81,873
Clocks, pkgs	7	350
Ag. imp, pkgs	4	269
Mf. iron, pkgs	4	600
Hamburg.		
Ptm, gls.	1,894,611	149,854
Clocks, pkgs	63	1,281
Ag. imp., pkgs	26	1,215
Scales, cs	19	233
Hdw., pkgs	83	814
Cutlery, case	1	13
Mach'y, pkgs	30	3,801
Sew. ma., cs	1577	26,756
Mf. iron, pkgs	9	486
Copper cks	6	1,745
British West Indies.		
Ptlm., gals	2500	258
Hdw., pkgs	2	122
Sh. nails, bxs	2	32
Nails, bxs	5	104
Clocks, pkgs	4	83
Bar tin, box	1	27
Ir. chains	2	66
Cutlery, cs	2	43
Sew. ma., cs	6	168
Antwerp.		
Ptlm., gals	863,820	70,005
Hdw., cs	21	516
Sew. ma., cs	830	3,582
Christiania.		
Hdw., cs	20	323
Limerick.		
Ptlm., gals	213,591	18,185
Cork.		
Ptlm., gals	162,679	13,624
Liverpool.		
Hdw., pkgs	46	6,041
Clocks, pkgs	199	5,582
Cop. ore, bgs	1850	14,000
Rifles, cs	101	21,015
Pistols, cs	49	8,000
Mf. iron, pkge	1	25
Cutlery, cs	2	350
Scales, cs	18	354
Pumps, pkgs	2	175
Carbines, cs	50	9,509
Copper, pigs	645	8,000
Nick. plt., case	1	300
Copper, bars	306	6,700
Ferro pits, bxs	15	90
Sew. ma., cs	89	8,690
Arms, cs	12	3,100
Mf. plat., cask	1	17,030
Carbines, cs	50	10,000
Ore, cs	2	125
I. rolls, cs	102	4,200
Nails, case	1	50
Hull.		
Hdw., cs	8	122
Ag. imp., pkgs	8	735
Newcastle.		
Sew. ma., cs	17	450
Plymouth.		
Ptlm., gals	152,074	14,400
London.		
Clocks, pkgs	641	15,849
Saws, case	1	45
Mf. iron, pkgs	47	982
Sew. ma., cs	306	6,120
S. rollers, cs	100	500
W. mill, cs	6	187
Ag. imp., pkgs	31	800
Met. gds., case	1	40
Cartridges, cs	9	149
Bullets, cs	4	76
Hdw., pkgs	98	3,289
Mach'y, pkgs	86	4,645
Ptm, gls.	1,847,962	162,444
Pumps, pkgs	3	50
St'mpware, cs	10	300
Rifles, case	1	30
Glasgow.		
Clocks, pkgs	34	619
Ag. imp., pkgs	2	59
St'dw're, cs	5	400
S. rollers, cs	9	291
Mach'y, pkgs	3	145
Nails, bxs	40	117
Ag. imp., pkgs	5	250
Sligo.		
Ptlm., gals	291,658	25,739
Gibraltar.		
Hdw., pkgs	8	370
Clocks, pkgs	12	310
Havre.		
Ptlm, gals	381,933	26,735
Sew. ma., cs	39	1,350
Copper, cks	180	33,750
Clocks, cs	37	1,390
Hdw., pkgs	8	107
Guns, case	1	4,000
Ag. imp., pkgs	14	618
Tin plates, bxs	15	150
Mach'y, pkgs	12	2,072
Copper, bars	68	8,006
Mf. iron, pkge	1	47
Amsterdam.		
Ag. imp., pkgs	4	20
Pumps, pkgs	9	405
Clocks, pkgs	5	247
Hdw., pkgs	15	241
Mach'y, pkgs	4	325
Sew. ma., cs	8	117
Ptlm., gals	363,477	26,352
British West Indies.		
Mf. iron, pkgs	14	577
Ptlm., gals	6950	793
Pumps, pkgs	3	158
Nails, bxs	40	154
Hdw., pkgs	23	239
Ag. imp., pkgs	11	80
Nails, kegs	77	332
M. dust, bbls	10	13
Sew. ma., cs	7	129
Hdw., pkgs	12	109
British Australia.		
Hdw., pkgs	601	13,905
Nails, pkgs	7	53
Saws, cs	16	220
Cutlery, cs	2	71
Pumps, pkgs	40	1,589
Nails, cs	69	1,060
Sew. ma., cs	205	4,106
Ag. imp., pkgs	75	1,258
Cartridges, cs	11	373
Tacks, bxs	9	68
Mach'y, pkgs	62	4,250
Ptlm. gals	143,120	17,358
Wringers, cs	34	688
Arms and am. cs	10	2,078
W. mills, cs	138	4,113
Clocks, pkgs	254	4,728
Ptg. press, cs	4	210
Wire gds, cse	1	53
Scales, cs	13	1,070
Air pist., case	1	44
Nails, kegs	28	723
St'dw'e, cs	6	150
Mf. iron, pkgs	27	985
Chain, bbls	4	514
Hayti.		
Iron, pkgs	16	167
Ptlm., gals	1885	222
Nails, kegs	7	20
British Possessions in Africa.		
Hdw., pkgs	348	5,364
Pumps, pkgs	5	156
Ptlm., gals	18,540	3,226
Wringers, pks	13	178
Wash. mach., cs	6	79
Mf. iron, pkgs	569	5,195
Ag. imp., pkgs	208	2,862
Brass g'ds, cse	1	30
Nails, bxs	21	116
Nails, kegs	20	100
Jacks, cs	2	40
New Brunswick.		
Ptlm., gals	4050	415
Mach'y, pkgs	8	300
Central America.		
Y. metal, cs	3	290
Cutlery, cs	3	171
Mf. iron, pkgs	228	1,418
Hdw., pkgs	28	745
Ptlm., gals	48,870	5,989
Sew. ma., cs	20	400
Tin, bxs	30	189
Nails, kegs	99	307
Iron safe	1	62
Cartridges, cse	1	25
British Guiana.		
Ptlm., gals	5000	500
Nova Scotia.		
Ptlm., gals	30,000	3,000
Venezuela.		
Nails, bxs	29	359
Nails, kegs	3	36
Scales, pkgs	21	308
Hdw., pkgs	121	1,228
Iron, bdls	6	49
Zinc, cks	2	111
Tacks, bxs	24	72
Skates, case	1	38
W. clos., pks	6	79
Tubes	28	60
Cop. nails, cs	2	62
Ptlm., gals	25,600	2,620
Clocks, cs	3	64
Sew. ma., cs	51	768
Mach'y, pkgs	9	468
Mf. iron, pkgs	142	889
Cutlery, cs	7	231
Steel sheets	79	2,100
Staples, kegs	17	482
Engin's' tools, pkgs	4	397
Cuba.		
Hdw., pkgs	176	3,479
Ptlm., gals	111,971	10,903
Iron safes	4	552
Mf. iron, pkgs	1255	7,454
Sew. ma., cs	108	1,950
Pumps, pkgs	8	136
Wire gds., cs	2	50
Axles	24	330
Valves, cs	2	123
Fountains, cte	1	72
Iron, pkgs	228	1,150
Scales, pkgs	3	20
Car wheels	30	128
Wire rope, roll	1	110
Mch'y, pkgs	1277	127,982
Ag. imp., pkgs	31	1,154
Valves	2	100
Blowers	4	90
Tacks, kegs	2	28
Clocks, pkgs	5	71
Nails, kegs	6	29
Saws, cs	4	175
Nails, kegs	139	473
Steel, bdls	2	36
Copper still	1	2,555
French West Indies.		
Ptlm., gals	2000	210
United States of Colombia.		
Mach'y, pkgs	100	7,369
W. mills, case	1	72
Cartridges, cs	59	1,141
Clocks, pkgs	14	311
Saws, cs	3	68
Tin, bxs	3	43
Scales, pkgs	53	867
Wire gds, case	1	25
Pistols, cs	9	565
Locomotives	2	16,110
Brass tubes, cs	2	230
Zinc, bxs	19	315
Tacks, cs	2	40
Car wheels & a., prs	4	148
Mf. iron, pkgs	103	1,340
Petm., gals	8406	1,118
Sew. ma., cs	159	3,806
Cutlery, cs	16	749
Hdw. pkgs	178	4,620
Arms, cs	2	272
Iron, pkgs	208	414
Ag. imp., pkgs	25	636
Guns, case	1	98
Stmpdware, cs	5	128
Sulph. copper, bxs	20	140
Nails, kegs	704	2,293
Cop. gds., pkgs	2	48
Revolvers, cs	2	164
Q'ksilver, flks	10	294
Steel, cs	4	87
Iron safes	2	109
Santo Domingo.		
Ptlm., gals	8100	897
Ag. imp., pkgs	5	52
Mach'y, pkgs	550	31,444
Nails, bxs	12	90
Locomotive	1	4,000
Iron safe	1	80
Brass g'ds, cse	1	70
Cutlery, case	1	25
Nails, kegs	83	308
Scales, bxs	24	1,224
Hdw., pkgs	30	401
Copper, pkgs	3	102
Iron, pkgs	3	102
Brazil.		
Ptlm., gals	15,900	2,069
Mf. iron, pkgs	140	1,571
Cot. gins, cs	33	1,361
Sew. ma., cs	12	480
Mach'y, pkgs	17	1,470
Ag. imp., pkgs	87	1,522
Scales, cs	100	440
Clocks, pkgs	85	2,641
Stmpdw're, cs	27	1,542
Chain, bbl	1	20
Nails, pkgs	9	175
Hdw. pkgs	73	1,307
Cutlery, cs	33	1,408
Boiler	1	688
Tacks, cs	8	259
Pistols, case	1	59
Engin'rs' mat., bxs	4	1,029
Iron, cs	9	231
Turn tables, pkgs	24	2,810
Saws, cs	3	175
Pumps, pkgs	3	195
Steel rails	300	1,748
Funchal.		
Ptlm., gals	5000	500
Dunkirk.		
Ptlm., gals	163,877	13,112
Barcelona		
Pumps, pkgs	20	1,137
Trieste.		
Ptlm., gals	156,825	13,100
Fiume.		
Ptlm., gals	469,938	31,150
Alexandria.		
Petm., gals	142,000	14,022
Lisbon.		
Ptlm., gals	242,496	20,567
Genoa.		
Hdw., cs	5	178
Mf. iron, pkgs	6	220
Ag. imp., pkge	1	49
Siam.		
Ptlm., gals	250,000	25,000
Japan.		
Hdw., case	1	50
Ptlm., gals	484,750	48,000
Mexico.		
Hdw., pkgs	165	2,340
Ag. imp., pkgs	57	1,648
Pumps, pkgs	6	176
Nails, kegs	214	660
Sew. ma., cs	49	900
Ptlm., gals	43,617	3,969
Revolvers, cs	2	130
Cartridges, cs	13	285
Bellows	5	27
Mf. iron, pkgs	560	5,272
Mach'y, pkgs	395	23,703
Tacks, bxs	5	108
Wire gds, pkg	3	62
Clocks, pkgs	2	364
Nails, cs	35	225
Cutlery, cs	7	384
Firearms, cs	2	195
W. closets, cks	2	58
Br. gds., cs	3	89
Tubing, pcs	81	726
F. engine	1	300

IMPORTS

Of Hardware, Iron, Steel and Metals into the Port of New York, for the Week ending Oct. 7, 1883.

Importer	Goods
Hardware.	
Amsinck G. & Co.	Machinery, pkgs., 1
Barbour Bros.	Machinery, cs., 24
	Machinery, pcs., 25
Boker Hermann & Co.	Hardware, cutlery and guns, pkgs., 41
Brown, Shipley & Co.	Case, 1
Degrauw, Aymer & Co.	Chains, cks., 3
	Chains, lengths, 9
Dolge Alfred,	Mdse., cs., 7
Duval H. R.	Machinery, pcs. and pkgs., 46
Ehrmann E.	Case, 1
Fuchs & Lang,	Machinery, pkgs., 15
Field Alfred & Co.	Mdse., cs., 17
	Cases, 30
	Casks, 13
Graef Cutlery Co.	Cases, 3
Godfrey C. & J.	Arms, cs., 2
Hartley & Graham,	Guns, cs., 5
Hildick A. H.	Chains, pcs., 9
	Chains, cks., 5
Ivery J. W.	Machinery, pkgs., 8
Jex Wm. & Co.	Guns, cs., 16
Kursheedt Mfg. Co.	Machinery, cs., 2
Lendholt G.	Machinery, parts, case, 1
Lewis & Conger	Hhds., 7
Low C. H	Machinery, pkg., 1
McCoy & Saunders,	Screw jacks, 20
	Levers, case, 1
	Cases, 2
Moore's Sons J. P.	Mdse., cs., 3
	Arms, cs., 21
Paton, Vickers & Co.	Machinery, cs. 2
Robinson J.	Machinery, case, 1
Roche Herman,	Arms, case, 1
Reid John,	Case, 1
	Engine, 1
Schoverling, Daly & Gales,	Arms, cs., 70
	Mdse., cs., 26
Scott W. F.	Guns, cs., 2
Smith & Sons Carpet Co.	Machinery, cs., 14
Sneadbody W. P.	Guns, case, 1
Struller, Lau & Co.	Arms, case, 1
The Clark Mile End Co.	Machinery, pkge., 34
Taylor Thos.	Mdse., cs., 3
Taylor Steven M.	Coal creeper mch., 1
Vom Cleff & Co.	Cases, 2
Wiebusch, Hilger & Co.	Hardware, cutlery, &c., pgs., 14
Witte, John G. & Bro.	Cutlery, cs., 7
Order,	Casks, 5
	Cases, 6
	Boiler for Greytown, 1
	Cases for Greyt'n, 7
	Guns & stocks, cs., 4
	Fry pans, ck., 1
	Guns, cs., 7
	Cast buckets, 8
	Machinery, cs. 15
	Machinery, pcs., 48
Iron.	
Baring Bros. & Co.	Nail rods, bdls., 3375
	Rivet rods, coils, 4746
	Bars, 7765
	Rods, bdls., 5264
Becket P.	Pig, cks., 35
Brown Bros. & Co.	Ore, tons, 500
Coddington T. B. & Co.	Sheets, bdls., 208
Crocker Bros.	Spiegel, lot
	Pig, tons, 200
Downing, Sheldon & Co.	Fish plates, bdls., 20.
Duval H. R.	Fish plates, bdls., 305
	Fish plates, bbls. 50
Hanmore J. W.	Wire netting, r'ls, 20
Lang W. Bailey,	Bars, 432
Lee Jas. & Co.	Pig, tons, 200
Lillienberg N.	Coil, 1
	Bars, 1621
Lundberg Gust.	Bars, 277
	Rivet rods, bdls. 787
Mosle Bros.	Railroad switches, 33
Merrick & Co. C. S.	Galv. sheets, cs., 2
Meissner, Ackermann & Co.	Rivet wire rods, bdls., 2042
Naylor & Co.	Spiegel, tons, 300
Perry & Co.	Castings, case, 1
Pierson & Co.	Sheets, bdls., 480
Plock & Co.	Wire rods, pkgs., 962
Stetson Geo. W.	Pig, tons, 200
Williams H. E.	Oxide, cks., 100
Williamson Jas. & Co.	Pig, tons, 300
Order,	Pig, tons, 275
	Sheet irons, pkgs., 4411
	Sheet iron, bdls., 507
	Bars, 2221
	Spiegel, tons, 975
	Spiegel, lot
	Fish plates, tons, 50
	Wrought plates, tons, 102
	Old heavy scrap, tons, 300
	Bars for Greytown, 116
	Rods, bdls. 9196
	Wire rods, coils, 575
	Bars, bdls., 70
	Ore, tons, 300
	Rivet wire rods, bdls., 3579
	Castings, cs., 25
	Old rails, 2698
	Rings, bdls., 5
	Spiegel, kg., 557,831
	Tons, 230
	Galv. sheets, bdls. 225
	Cast pipes, 510
	Cast brackets, 100
	Angle, lengths, 828
	Cast columns, 58
	Center sh'ts, pairs, 9
Steel.	
Abbott Jere & Co.	Tires, 12
	Cases, 18
Baldwin Bros. & Co.	Blooms, 46
Belcher H. W.	Cases, 3
	Bundles, 73
Bureau of Ordnance,	Armor plate, 1
Baring Bros. & Co.	Rods, bdls., 722
Brown Wm.	Cases, 4
	Bdls., 92
Carey & Moen,	Casks, 24
Dolge, A.	Wire, cask, 1
Downing, Sheldon & Co.	Bundles, 235
	Pkgs., 4
Duval H. R.	Plates, 55
	Cases, 2
	Bundles, 55
Lillienberg N.	
Leng G. S.	Casks, 9
	Rolled Bess. metal bars, 10
Temple & Lockwood,	Sheets, case, 1
	Bar, 1
	Bars, cs., 3
	Bale, 1
	Packages, 13
Wagner W. F.	Bundles, 403
	Bars, 77
	Cases, 20
	Plates, 65
	Box, 1
Woltman & Mickert,	Tires, 100
Order,	Bundles, 13
	Cases, 17
	Bar, 15
	Rods, bdls., 3067
	Nails (steel), kegs, 20
	Old spring, tons, 100
	Rails, 170
	Packages, 7
	Casks, 5
	Flange rails, 8107
	Rails, 1717
	Forgings, 48
	Rings, 12
	Bands, 245
	Castings, cks., 4
Metals.	
Batram Bros.	Old copper, &c., bdls., 6
Baring, Bros. & Co.	Tin plates, bxs., 242
Cort N. L. & Co.	Tin plates, bxs., 4553
Dickerson, Van Dusen & Co.	Tin and terne plates, bxs., 482
Downing & Co. R. F.	Met'lic nickel, cks., 5
Erie Dispatch Co.	Terne plates, bxs., 700
Gt. West. Dispatch Co.	Tin plates, bxs., 531
Krickel, Gould & Co.	Brass, pkgs., 5
Lamarche & Sons	Zinc, cs., 7
	Zinc, cks., 22
Lough & Van Romondt	Old metal, lot, 1
Merrick & Co. C. S.	Tin plates, bxs., 110
Newall Universal Mill Co.	Brass nuts, &c. cs., 1
Phelps, Dodge & Co.	Tin plates, bxs., 11,315
Western Trans. Co.	Tin and terne plates, bxs., 658
Order,	Tin plates, bxs., 23,525
	Tin slabs, 5155
	Tin bxs., 5422
	Lead pigs, 1820
	Black taggers, bxs., 200
	Yellow metal cs., 115
	Tin and terne plates, bxs., 1242

COAL.

There is a temporary lull in the Anthracite Coal trade, according to common report among the wholesale operators and dealers, unless the favorite brands of Lehigh are excepted. The quietness spoken of is attributed to uncertainty respecting the future. Dissenting from this view is the Delaware and Hudson Canal Company, who are represented to be full of orders. It is doubtless true that there are numerous orders on the books of the several corporations, and that a large body of Coal is moving, but, with the exceptions noted, the current business is not what it ought to be, this month ordinarily being among the most active. Respecting the subject of suspension, Mr. Olyphant, of the Delaware and Hudson, says it will take place whenever such a course is found necessary, but that, contrary to reports from Philadelphia to the New York Stock Exchange, all the companies are working together harmoniously and very nearly on uniform prices. The prices of free-burning Coals generally conform to the August circular, but at present quotations of any sort would be misleading. A belief is common that suspension is not probable before December, though it may come earlier. The trouble appears to be that prices were stated too high last spring, the expectation being to realize 15¢ ℔ ton more than last year; hence the present reaction. Despite all, the current year is likely to rank among the most prosperous as to volume of business and profits.

The total amount of Anthracite Coal sent to market for the week ending October 6 was 701,524 tons, compared with 647,501 tons in the corresponding week last year. The total amount of Anthracite mined thus far in the year 1883 is 23,439,083 tons, compared with 21,351,034 tons for the same period last year.

FOREIGN TRADE MOVEMENTS.

Included in the imports for the week ending October 12 were leading articles of merchandise valued as follows:

	Pkges.	Value.
Antimony	145	$7,762
Anvils	33	196
Brass goods	46	5,731
Bismuth	7	3,611
Bronzes	55	8,057
Chains and anchors	28	1,801
Clocks	115	17,686
Copper	..	6,717
Cutlery	105	33,977
Guns	155	28,645
Hardware	21	2,292
Iron, pig, tons	4,428	82,076
Iron, sheet, tons	102	7,328
Iron ore, tons	295	656
Iron, cotton ties	2,200	1,713
Iron, other, tons	618	24,920
Railroad bars	127	205
Machinery	240	19,383
Metal goods	358	22,021
Nails	8	57
Needles	19	4,707
Nickel	10	2,920
Old metal	..	18
Platina	8	40,274
Percussion caps	9	1,802
Pins	64	5,266
Plumbago	579	4,403
Saddlery	29	3,690
Steel	6,843	30,503
Tin, bxs	68,073	335,688
Tin slabs, 4,696; lbs	404,674	89,956
Wire	49	869
Zinc	275,625	10,204
Zinc oxide	250	2,896

The importations of hardware and metals compare with previous dates as follows:

	For the week.	40 weeks of 1883.	Same time 1882.
Cutlery, pkgs	105	6,140	5,914
Hardware, pkgs	21	921	833
Iron, R. R., bars	....	10,642	83,240
Lead, pigs	....	8,589	27,124
Steel, pkges	6,843	2,420,470	1,580,219
Tin, bxs	68,073	1,638,736	1,778,879
Tin slabs, lbs	404,674	18,841,585	14,847,688

PHILADELPHIA.

Office of *The Iron Age*, 220 South Fourth St.,
PHILADELPHIA, Oct. 16, 1883.

Pig Iron.—There is very little change to note as regards prices, but there are indications of a better feeling, and prospects of a decided improvement in the demand. This refers more particularly to Mill Irons, although the tone of the market throughout is undoubtedly better than it has been for some time past. It is therefore quite likely that a considerable amount of business will be done before the close of the month, although there is nothing to warrant the idea of higher prices. The tendency toward lower figures, however, appears to have been already arrested, and a fair degree of confidence is manifested by both buyers and sellers. Still, there is nothing of a speculative character noticeable, and transactions are of a strictly legitimate character, and to cover actual requirements within the next 60 days. Foundry Irons are comparatively dull, and values too much unsettled to induce heavy purchases, unless at materially lower figures than are usually asked. Sellers are still anxious for business, but do not yield very readily, preferring to take their chances of the market later on, rather than make quotations which may, perhaps, after a while, prove to have been unnecessarily low. The asking prices for No. 1 Foundry, delivered at tide, range from $21 to $22.50, the inside figure being an absolutely firm quotation. At the higher quotations concessions have been granted according to circumstances, although in many instances small lots are taken at pretty full prices. No. 2 Foundry shows no improvement, and such sales as have been made were at from $19 to $20, delivered, according to brand. Mill Irons are the most active articles on the list, and offers have been made for large lots, but in most cases at figures which sellers have not felt at liberty to accept; $17 @ $17.50, at tide, for Open Gray Irons has been bid for several thousand tons, an average of at least $1 below sellers' ideas of value. One or two 1000-ton lots of Southern Irons have been taken at $18, subject to approval of carload samples. Pennsylvania brands are held with a good deal of firmness at about $17.50, f.o.b. cars at furnace, and, from all appearances, prices have reached a solid foundation, for the present at all events. The demand seems to have come at a very opportune time for producers of Pig Iron, and is doubtless due to a depletion of stocks in consumers' yards. The renewal of the demand is not likely to advance prices, however, but by relieving holders of a considerable amount of stock, will not only check the declining tendency, but probably steady the market until the close of the year. Taking the week as a whole, therefore, it may be considered fairly satisfactory, while the immediate outlook is certainly more encouraging than at any time within the past three months.

Foreign Iron.—Bessemer appears to be completely neglected, and there is not the slightest indication of improvement at present. Bids of $20.50 have been asked for, but without response. Spiegeleisen is in demand, with $30 bid for 20%; offered in 1000-ton lots at $30.50 @ $31.

Muck Bars.—The demand for good quality is well maintained, and sales are readily made at about $34 at mill. Inferior qualities are comparatively dull, demand being for the best qualities.

Blooms.—Demand dull and uncertain; prices irregular at the following as asking rates, viz.: Charcoal Blooms, $57 @ $58; Run-out Anthracite, $47.50 @ $49; Scrap Blooms, $42 @ $44; Northern Ore Blooms, $39.50 @ $41.50.

Bar Iron.—The market shows but little change, the demand being light and very irregular. The usual monthly meeting of manufacturers was held in this city yesterday, at which 2.2¢ was agreed upon as a basis for labor, although in the present condition of the market it will be difficult to maintain that as a firm selling price. The demand does not appear to have improved during the week, and complaints are general both as regards the amount of business offered and price at which orders are taken. The demand for specialties helps out manufacturers considerably, in the absence of which there would be a large amount of idle capacity. As it is, a majority of the mills are only employed part time, and, from what we can learn, some large concerns are seriously considering the propriety of suspending work altogether, unless some change can be made by which there will be a slight margin for profit. The outlook is considered to be exceedingly unsatisfactory, and there are very few who, for the present, see any ground upon which to base anticipations of improvement. Sales during the week have not been of much importance, small lots, as required from time to time, being about all that buyers are inclined to take. Prices are nominally 2.2¢, but on large lots of desirable sizes buyers expect to shade about a tenth. Skelp Iron is quoted at 2.15¢, but it is understood that this quotation has been underbid on one or two large orders recently given out.

Plate and Tank Iron.—New business has been rather quiet in this department for several weeks past, but the large amount of work on hand has enabled manufacturers to maintain their quotations. These orders are being rapidly completed, but within the past week inquiries have been made for considerable quantities of Boat Plate, which leads to the impression that the activity of the past three months will be maintained for some time to come. There is a considerable amount of competition, nevertheless, and while prices are nominally unchanged, it is not unlikely that concessions will be made on lots desirable as to size, specification and delivery. The following are the usual asking prices, viz.: Tank Iron, 2.5¢; Boat Plate, 2.35¢ @ 2.4¢; Shell, 3¢ @ 3.25¢; Flange, 4¢ @ 4.25¢, and Fire-Box, 5¢ @ 5.5¢.

Structural Iron.—In this department there is very little to report except that the mills are rapidly getting through with their orders. There is not much coming in to offset this, and from present appearances it is likely there will be less work during the winter than there has been for several seasons. Prices are nominally unchanged, but the market is rather weak, as follows: Double-Refined Bars, 2.5¢; Bridge Plates, 2.5¢; Angles, 2.3¢ @ 2.4¢; Tees, 2.8¢ @ 3¢; Beams and Channels, 3.5¢.

Sheet Iron.—A moderate demand is reported in this branch, and without special change in prices. On the whole, a full average business has been done, but the demand has been somewhat irregular and spasmodic. Prices are well maintained on Thin Sheets; others are inclined to weaken a little on offers for good-sized lots. Sales have been chiefly at about the following quotations, viz.:

Common Sheets, No. 28	4¼¢
Common Sheets, Nos. 26 and 27	4 ¢
Common Sheets, Nos. 21 to 25	3¾¢
Common Sheets, Nos. 18 to 20	3½¢
Best Refined, ¼% advance on the above.	
Best Bloom Sheets, Nos. 26 to 28	6¾¢
Best Bloom Sheets, Nos. 22 to 25	6½¢
Best Bloom Sheets, Nos. 16 to 21	6¼¢
Common Red Plates, 3-16 to 16	2.7¢
Blue Annealed	2.8¢
Best Bloom, Galvanized, discount	45%
Second quality, discount	55%

Wrought-Iron Pipe.—The demand for small lots is fair, although somewhat less than during the previous week, while the outlook is by no means encouraging. Prices rule weak, and large buyers have no difficulty in placing orders at very low figures. Discounts on Boiler Tubes may be quoted at 60 @ 62½% off, and on Gas and Steam Pipe 70&5 @ 75% off list price.

Steel Rails.—The general position remains as before, although one or two large sales have been made by manufacturers in the western part of the State. Prices have not been stated authoratively, but there is reason to believe that the order was taken at a very low figure. Eastern mills continue to quote $37.50 @ $38 for prompt delivery, and about $37 for winter work, but for the last named buyers still seem to hold off, and in the absence of actual transactions we quote $37 as a nominal figure.

Old Rails.—There is quite a demand for small lots, prompt delivery, but there are very few obtainable. Shipments of T's are offered at $23.25, without leading to business. A sale of 800 tons Bridge Rails was closed to-day at $24—prompt shipment by rail to this port.

Scrap Iron.—Business moves somewhat slowly, although Choice No. 1, in carload lots, sells pretty freely at about $25. Cargo lots offered at $23 without attracting attention.

Nails—Are in good demand, but there appears to be a slight tendency toward lower prices. In a general way $2.90 is quoted, with $2.85 as a bottom price for good-sized lots.

PITTSBURGH.

Office of *The Iron Age*, 77 Fourth Avenue,
PITTSBURGH, PA., Oct. 16, 1883.

There has been but little change in the general Iron situation since our last report; while some manufacturers make a moderately fair report in regard to business, others talk rather discouragingly, the low prices being the main cause of complaint. There is a fair demand for all kinds of Finished Iron and Nails. The mills generally have about all they can do, and but few of them are sold very far ahead. It is generally admitted that business is not what it should be at this time of the year, and there seems to be no immediate prospect of a better state of things. One encouraging feature at the present time lies in the fact that there are, so far as your correspondent can learn, but very

few, if any, individuals or firms in the Iron business in a crippled financial condition; there are but few, if any, as was the case some years ago, who are forced to sell at a sacrifice in order to meet maturing obligations. One of our largest manufacturers, who has just returned from an extended tour of two months, even as far as California, does not speak very encouragingly of the business outlook, and the trade generally have given up the idea of any particular activity during the remainder of the present year.

Pig Iron.—There is a considerable business in the aggregate, though the sales are mostly small. Our home furnaces continue to do the great proportion of the business. It is estimated that they are furnishing fully one-half (some put it as high as three-fourths) of what is being consumed. Stocks continue comparatively light, both in hands of consumers and producers; the former are carrying only enough to meet immediate wants, while the latter are sold pretty close up. Some of them have contracts booked sufficient to absorb their production during the remainder of the year. Moreover, advices from the Shenango and Mahoning Valleys state that most of the furnaces in blast in those valleys are working on contracts, and that there, as here, there is little or no accumulation. We repeat former quotations:

No. 1 Foundry	$21.00 @ $22.00, 4 mos.
No. 2 "	19.00 @ 20.00, 4 "
Gray Forge, Neutral	17.50 @ 18.00, 4 "
White and Mottled Forge	16.00 @ 16.50, 4 "
All-Ore Forge	19.00 @ 20.00, 4 "
Cold Blast Charcoal	28.00 @ 33.00, 4 "
Warm " "	24.00 @ 28.00, 4 "
Bessemer Iron	21.00 @ 21.50, 4 "

A few weeks ago there were some large blocks of Bessemer Iron sold, including one of 5000 tons at $20.50, 4 mos., and 500 at $20. Furnaces here are refusing to sell under $20.50, cash, to $21, 4 mos., and the last round lot sale reported was at $20.50, cash. It is claimed by those who are in a position to know that there is no money to the producers below the prices quoted.

Muck Bar—Continues very dull and prices are weak, but unchanged. So far as we can learn, there have been no sales below $33, cash, but it is freely offered at the prices quoted. It is generally conceded that there is no bonanza to the maker at the present prices.

Manufactured Iron.—The condition of trade remains much the same as noted a week ago; the mills are nearly all at work, some of them running to their full capacity, but prices continue unsatisfactory, and herein is the great source of complaint. Assorted orders are still quoted on a basis of 1.85¢ @ 1.9¢ for Bars, 60 days, 2 % off for cash.

Nails.—There is a very fair business; makers continue to have about all they can do, and prices are steady at $2.70 in carload lots and upward, 60 days, 2 % off for cash, and 5¢ @ 10¢ ⅌ keg additional in a jobbing way. The regular monthly meeting did not take place last week, owing to the fact of a special meeting having been held a couple of weeks before. According to the arrangement made at the special meeting in question, there is to be a general stoppage on the 15th of next month unless there is a material improvement in business in the meantime.

Wrought Iron Pipe.—The Pipe mills continue to have all they can do, but prices are no better, and the indications for an improvement in this important respect are not very promising. Discounts remain unchanged at 73 @ 75 % on Gas and Steam Pipe, and 60 % on Boiler Tubes. It is rather strange, in view of the fact that the mills have had about all they could do for some time past, that they have been unable to obtain better prices, but such is the case. There is no combination, makers appearing to have but little confidence in each other. Oil-Well Casing is still quoted at 45¢ ⅌ foot, net; do. Tubing, 14¢ @ 15¢, net.

Steel.—This important interest is still reported as being in an unsatisfactory condition. Prices, especially as regards the commoner grades, are weak and irregular. Best brands of Refined Cast Steel, 11¢ @ 12¢; Crucible Machinery, 6½¢ @ 7¢; Bessemer and Open-hearth do., 4½¢ @ 5¢. Steel Boiler Plates, 6¢ @ 6¼¢. Bessemer Billets, $38 @ $42, according to carbon.

Steel Rails—Are quoted at $37.50 @ $38.50, according to section, for delivery during November or December, and $37 for delivery during first quarter of 1884. It is stated that some of the railroads are refusing to pay more than $36 for delivery next year, but so far as known hereabouts no contracts have been made as yet under $37.

Old Rails.—We can report sales of some 1500 tons American T's within the past week at $24 delivered at Youngstown, and $24.50 delivered in Pittsburgh. There are quite a number of orders on the market at $24, but no sellers can be found under $24.50, some refusing to sell below $25. Offers have been made to sell at $23.50 @ $23.75, delivered by river on barge, but, as it costs about $1 ⅌ ton to have them handled from river to mill, consumers are willing to pay the difference by rail.

Railway Track Supplies.—Business is reported unsatisfactory and not at all what was expected. Railway Spikes remain unchanged at 2.6¢, 30 days; Splice Bars, 1.9¢ @ 2¢, and Track Bolts, 3¢ @ 3¼¢.

Crop Ends.—American are still quoted at $23.50 @ $24, with but little inquiry. Foreign Crop Ends, like Foreign Rails, are virtually shut out of interior markets.

Scrap—Is generally reported dull, with but little change in prices. No. 1 Wrought is still quoted at $20 @ $22 ⅌ net ton for ordinary lots, and $23 for Selected Railway; Wrought Turnings, $16 @ $18; Old Car Axles, $30 @ $32; Old Car Wheels, $19 @ $20, gross; Cast Borings, $13 @ $14.

Window Glass.—The strike continues, and as the factories have been idle since July 1, stocks are naturally very much reduced and badly broken. It is difficult to have an assorted order filled here; manufacturers have to borrow and buy from each other.

Coke.—There is an increasing business, and the shipments could be increased if transportation could be obtained; prices firmer, but unchanged. Furnace Coke, $1 ⅌ ton, free on cars at ovens, and Foundry do., $1.20 @ $1.25. The movement noted some weeks ago, which has for its object the monopoly of the entire Connellsville region, still continues; small operators are still being bought out, and the indications are that the Coke trade will soon be owned and controlled by a syndicate similar to the Standard Oil Company.

CHICAGO.

Office of *The Iron Age*, 36 and 38 Clark St., Cor. Lake St., CHICAGO, Oct. 15, 1883.

Hardware.—The Hardware market continues in about the same condition as at our last writing. The demand for heavy goods is perhaps a little stronger, if anything, while jobbers are doing an even trade in all lines. Stove Ware, Sheet-Iron Goods, Barb Wire, Chains and Blacksmiths' Articles are moving in large quantities. The demand for light Hardware has fallen off considerably during this month, compared with the same time last month, but, taking it throughout, the market is very encouraging. There is some complaint that many articles are being sold at figures much too low, but when the entire business is averaged up, there is not much margin for fault-finding. Upon the whole, prices are very fair, compared with some of the other branches of trade. Prices on some few articles have been slightly advanced, but the encouraging feature is the prospect of higher prices rather than lower, and a firm, steady market.

Nails.—The situation of the Nail market is almost indescribable. It seems preposterous to write a market brisk, with strong demand and scarcely supply enough to meet it, and at the same time announce prices weaker and the market unsteady—yet this is the exact condition of the Chicago Nail market to-day. The shipment of Nails during the past week has been as heavy as any for a month past. The orders have all been smaller than was the custom some time ago, but greatly increased in number. Carload lots are quoted at $2.90 ⅌ keg, and the retail trade at $3. These prices are now shaded for carload lots, and a lower price will probably be named before the close of the week.

American Pig.—The features of the previous week have been carried through the one just closed, and the Pig Iron market is firm and active. Numerous orders were placed during the week by purchasers who have been holding off for several months in hope of obtaining lower figures, but the condition of the supply and the prospects for the future have forced them into the market. Orders placed are of the smallest number of tons that consumers can possibly get through with, and in many cases do not cover the amount necessary for their usual business between this and the first of the year. So far this market has not felt the decline of two weeks ago in the East, and, not being subject to the same influence and consuming comparatively little of that class of Iron, is not likely to feel it to any extent beyond sympathy in a general business way. The trade is more favorable than was expected, and the volume of business will be, in the aggregate, a surprise to many of the most despondent of several months ago. The following prices are quoted firm, 4 mos.: Lake Superior Charcoal, Nos. 1 and 2, $23; No. 3 at $23.50; No. 4 at $25, and Nos. 5 and 6 at $24; Lake Superior Coke at $22.50 @ $24; Lake Superior and Ohio, mixed, at $22 @ $22.50; Ohio Standard Black Band, No. 1, $23 @ $25; Southern, No. 1, at $22.50, and No. 2 at $21; Silvery Soft at $20 @ $22; Anthracite, No. 1, at $22, and No. 2 at $21. For 100-ton lots, immediate Chicago delivery, the following cash prices are quoted by furnace sales agents:

Briar Hill	$22.50
Iron River	22.00
Himrod, No. 1	21.50
Rockwood, No. 2	20.50
Sloss Silvery, open	20.00
Briar Hill Scotch	24.00
Deer Lake Iron, Nos. 1 and 2	23.00
Fon du Lac	22.50

Scotch Pig.—The market for foreign Iron is rather quiet, consequent upon a light consumption and demand. Consumers are not anxious, and are only taking what they need in small lots. We continue last week's quotations, as follows: Summerlee, $28; Glengarnock, $28; other brands from 50¢ to $1 ⅌ ton less.

Merchant Steel.—We have no change to note in the condition of the Merchant Steel market. Trade continues remarkably quiet. Consumers are buying lightly and shopping considerably to meet their desires in price. Prices are so graded by qualities that there seems to be no difficulty in getting something at any price the consumer may name. For standard brands we make the following quotations: Refined Cast Steel, 10½¢ @ 11½¢ ⅌ lb; Crucible Machinery, 6½¢ @ 7¢; Bessemer and Open-hearth do., 4½¢ @ 5¢; Steel Boiler Plate, 6¢ @ 6¼¢.

Steel Rails.—The Steel Rail market is said to be more quiet than at any time since 1875. Mills claim to have enough orders to keep them running, but nothing more, and these are all small and unprofitable. There are a few inquiries for future delivery, but nothing of a character to give strength or interest to the market. We quote, nominally, $39 @ $40, as heretofore.

Old Rails.—There is considerable doing in Old Rails, with the supply greater than the demand. Prices are weak, and likely to decline still further. We quote for Old T's, Chicago delivery, $20.50, at which figure several thousand tons have recently changed hands.

Bar Iron.—The Bar Iron trade has been keeping up quite steadily. Consumers are laying in small stocks, at least are buying more liberally than their immediate requirements, and express more confidence in present prices than has been felt during the summer months. The tendency to make concessions seems to have passed away and prices have grown firm instead for good Refined Iron, which is quoted at $2.10 from store. There are brands of Iron that can be had for less, but the quality is questionable and rarely ever stands the test. The usual concessions are allowed on the above for carload lots and desirable specifications.

Builders' Iron.—The demand for Structural Iron is without change. The market remains firm and the supply ample to meet the necessities of trade. There is not a very heavy stock on hand, but it is carried in good assortment at the following prices: Tank, 2.7¢; Angles, 2.9¢; Beams, 3.6¢, and Channels, 3.6¢ @ 3.8¢.

Galvanized Iron.—The market continues fairly active, though not what it was hoped it would be during this month. Prices are steady. Juniata is quoted at 45 and 5 % off, and Refined at 45 and 10 % off.

Black Sheets.—There is not much doing in Black Sheets beyond the usual retail trade among stovemen. A better trade is anticipated during the closing half of the month.

Scrap Iron.—There is not much demand for Scrap Iron, furnacemen being very choice in their selections, and not very liberal in their prices. We quote the following as dealers' purchasing prices: No. 1 Wrought Scrap, ⅌ net ton, $17; Cast Scrap, ⅌ ton, $15; No. 1 Stove Plate Scrap, ⅌ ton, $10; Wrought Turnings, ⅌ ton, $9; Cast Iron Borings, $6; Old Plows and Plow Steel, $10; Malleable Scrap, $5.

EVERETT & POST, 156 Lake street, Chicago, report to us as follows, under date of October 15, 1883: *Pig Lead.*—During past week some refiners, anticipating a decline, have sold quite heavily. We hear of 1000 tons Common Refined having been marketed at 3.95¢ @ 4¢, Chicago. The tenor of our reports from various sections of the country leads us to think that at or near present prices considerable Pig Lead can be sold to consumers. There is comparatively little Lead pressing for sale, either spot or future delivery. The market closes quiet at 3.95¢ and 4¢ asked. *Connellsville Foundry Coke* is active and in good demand for future as well as present delivery. Prime Foundry Coke remains $5.20 and $5.25 ⅌ ton, f.o.b., Chicago and Crushed Coke, $6.15 and $6.20, f.o.b. Chicago.

CHATTANOOGA.

Office of *The Iron Age*, Market and 8th Sts., CHATTANOOGA, Oct. 15, 1883.

General business in the South is fair. The new cotton crop is going to market rapidly and in good condition. Prices for the staple are improving, and this will stimulate to clean picking, so the crop in bales may not, this year, fall far short of last year, when prices were lower. The lint is in very fine condition, there being no rains to beat it out or stain it. Building materials continue especially active and strong in price. The weather has been very warm for the season, with cool nights and plentiful rains.

Pig Iron.—There is nothing new to report. Consumers take only for immediate use, and even on small bills get slight concessions on quoted rates. Low grades are especially dull and unsought. We quote No. 1 Foundry, $19 @ $20; No. 2 Foundry, $18 @ $19; Gray Forge, $16 @ $19; White and Mottled, $14 @ $15; Car-wheel Metal, $24 @ $26.

Ores.—We quote 50 % Brown Hematite, ⅌ ton, $2 @ $2.75; Red Fossil, $2 @ $2.25, delivered at furnace.

Miscellaneous Articles.—Old Rails are quiet at $21 @ $22. Stocks continue light. Scraps are dull, except Selected Wrought. Wrought Scrap, $18 @ $22; Cast Scrap, $11 @ $14; Old Wheels, nominal, $22.

Nails—Are fairly steady at $2.75 for large bills, 2 % off for cash; job lots, 10¢ @ 15¢ higher.

Merchant Iron.—Bar is in fair demand at $2 @ $2.10. We quote Bolts, $3 @ $3.25; Spikes, $2.60; Splices, $2.

Coal.—We quote Fancy Lump, $3; Common, $2.50; run of mine to manufacturers, $1.50 at mills.

Coke.—We quote Furnace Coke, $3 at point of consumption; Foundry, 10¢ @ 12¢ ⅌ bushel.

LOUISVILLE.

GEO. H. HULL & Co., Commission Merchants, report as follows, under date of Oct. 13, 1883: The market continues quiet, but a large amount of Iron is being consumed and the volume of sales is satisfactory. We quote, for cash, in round lots, as below:

FOUNDRY IRON.	
No. 1 Hanging Rock Charcoal	$24.00 @ 24.50
No. 1 Southern Charcoal	22.00 @ 22.50
No. 1 Hanging Rock Stonecoal and Coke	19.50 @ 20.50
No. 1 Southern Stonecoal and Coke	19.50 @ 20.00
No. 2 " " "	18.50 @ 19.00
"American Scotch"	19.00 @ 20.00
Open Silver-gray	18.00 @ 18.50
Close "	17.00 @ 18.00
MILL IRONS.	
No. 1 Charcoal	19.00 @ 20.00
No. 1 Stonecoal and Coke, Neutral	17.50 @ 18.00
No. 2 " " "	16.50 @ 17.00
No. 1 " " Cold-short	17.00 @ 17.50
No. 2 " " "	16.50 @ 17.00
White and Mottled, Cold-short and Neutral	15.00 @ 15.50
CAR WHEEL IRONS.	
Hanging Rock, Cold-blast	30.00 @ 32.00
" Warm-blast	23.00 @ 24.00
Alabama and Georgia, Warm and Cold-blast	27.00 @ 28.00
Central Kentucky, Cold-blast	26.50 @ 27.00

W. B. BELKNAP & Co., Iron and Steel Merchants, Nos. 115 to 121 West Main street, report to us as follows, under date of October 13, 1883: *Bar Iron* is still in an unsatisfactory condition for the producer, there being lack of demand sufficient to stimulate prices. Specifications are scanned by the mills very closely and required to be of fair proportions as to the fancy sizes to go in at inside figures. Jobbing trade is good, but margins shaved as closely by competition among jobbers as for manufacturers. Favorable conditions exist all around us, and yet there is a notable lack of elasticity. No one feels exactly comfortable in buying, for fear that a lower price will prevail before the goods are sold. Whether many concerns are going to fetch up this side of the sheriff remains to be seen. *Sheet Iron.*—Light gauges are still quoted at as low figures as have been known this season; the heavier guages are held steady at the prices of the past two months. Sheet has not declined to as relatively low a point as Bar. While the latter is within $2 or $3 of as low a price as ever made hereabouts, Sheet is some $10 or $12 ⅌ ton higher than in the period of extreme depression before the boom. *Hoop* is held at Western Association rates. *Nails* are still unsatisfactory. They are on a gentle declivity and all buyers feel the fact. It is thought likely that the association will call a halt in November, though not all manufacturers share this idea. *Wire* is about in the same fix; each new price is a little lower than last. The National Bankers' Convention and Governor's Day at the Exposition have been the main outside features of the week.

ST. LOUIS.

HOFFER & Co., Pig Iron and Iron Ore Merchants, 214 Pine street, report to us as follows, under date of Oct. 13, 1883: For the time of year this is the dullest market in Iron in years. Quotations are nominally the same as last week:

HOT BLAST CHARCOAL IRONS.	
Missouri	$20.00 @ 20.50
Southern	20.00 @ 21.00
Ohio	25.00 @ 26.00
COAL AND COKE IRONS.	
Missouri	20.00 @ 20.50
Southern	18.50 @ 20.00
Ohio	20.00 @ 25.00
MILL IRONS.	
Red Short	18.50 @ 20.00
Neutral	17.00 @ 18.00
CAR WHEEL AND MALLEABLE IRONS.	
Missouri	21.00 @ 22.00
Southern	25.00 @ 28.00
Ohio	28.00 @ 32.00

CINCINNATI.

OCTOBER 15, 1883.—*Pig Iron.*—No material change in the market during the past week; all the conditions of supply and demand remain about the same as before, though the volume of business is thought to be somewhat larger than in the week previous. The failure of the Union Iron Company, of Portsmouth, Ohio, it is reported, can have no effect on the Iron market, as it has been expected that the development would be made any time in the past several months, and it is but a comparatively small local matter. It is reported that the Milton Furnace, of Wellston, Jackson County, will go into blast on the 25th, and bring up the short crop of Hanging Rock Softeners to the extent of 30 tons per day, supplying a need in a small way. All other goods are in plentiful supply. Quotations for the past week:

Best No. 1 Hanging Rock Charcoal Foundry	$24.00 @ 24.50
Good No. 1 Hanging Rock Charcoal Foundry	23.50
Good Southern Charcoal Foundry	20.00 @ 21.00
" " Coke Foundry	19.00 @ 19.50
Best No. 1 Hanging Rock Coke Foundry	21.50 @ 22.00
Good Hanging Rock Coke Foundry	19.00 @ 20.00
American Scotch Foundry	20.50 @ 21.50
No. 2 above makes 50¢ @ $1 less.	
Best Silver-Gray Softeners and Fluxers	20.50 @ 21.00
Good Silver-Gray Softeners, and Fluxers	19.50 @ 20.50
No. 2 and 3 Silver-Gray Softeners	19.50 @ 18.25
Forge Irons—No sales reported.	
Car Wheel Cold-Blast Charcoal	27.00 @ 30.00
Warm Blast	25.00 @ 27.00
Scrap Car-wheel	20.00 @ 20.50
Cast	.50 @ .75
Wrought	.80 @ 1.00
Rails, ⅌ gross ton	20.00

BALTIMORE.

W. N. WYETH, Iron and Steel Merchant, 46 and 48 South Charles street, reports us the following, under date of Oct. 15, 1883: Trade for the past week has ruled less active than for several months past. Stocks are, however, light, and purchases confined to supplying early wants, with values weak, and undersold, as per annexed figures:

Ref. Bar Iron, 1 to 6 x ⅜ to 1	⅌ lb	2 1-10 @ 2 2-10¢
" " 1 to 4½ x 1⅛ to 1	⅌ lb	2 1-10 @ 2 2-10¢
" " ¾ to 2, Round and Square	⅌ lb	2 1-10 @ 2 2-10¢
Hoop Iron, 1⅛ wide and upward	"	3 @ 3 1-10¢
Band Iron, from 1⅛ to 6 in. wide	"	2⅛ @ 2 6-10¢
Horse-shoe Iron	"	3 2-10 @ 3 3-10¢
Norway Nail Rods	"	5¼ @ 5½ ¢
Black Diamond Cast Steel	"	11 @ 12 ¢
Machinery Steel	"	4½ @ 5 ¢
Spring Steel	"	4 @ 4¼ ¢
Common Horse Nails	"	10 @ 11 ¢
Railroad Spikes, 5½ x 9-16	"	2 6-10 @ 2 7-10¢
Perkins' Horse Shoes, ⅌ keg of 100 lb		$4.37½
" Mule Shoes		5.37½

RICHMOND.

ASA SNYDER, Iron Merchant and Furnace Agent, writes as follows, under date of Oct. 15, 1883: The market for both finished and raw material is very quiet. The activity in Nails has assumed a more uniform tone, while the market for Refined Bar Iron is dull. Orders for Pig Iron are confined to small lots, but foot up a larger aggregate than those of the week preceding. Mills and furnaces are offering at the following figures:

No. 1 Scotch Pig Iron	$23.00 @ 26.00
No. 1 Anthracite Pig Iron	22.00 @ 22.50
No. 2 " "	20.00 @ 23.00
No. 3 " "	19.00 @ 22.00
No. 1 Virginia Coke Pig Iron	20.00 @ 21.00
No. 2 " " "	18.00 @ 19.50
No. 1 " " Mill Pig Iron	16.50 @ 18.50
Virginia C. B. Charcoal	32.00 @ 35.00
Old Rails	24.00 @ 25.00
Wrought Scrap No. 1	20.00 @ 21.00
Cast Scrap, No. 1	18.00 @ .....
Richmond Refined Bar Iron, ⅌ lb	2 2-10¢
Horse Shoes (Tredegar), ⅌ keg	4.00 @ .....
Mule " " "	5.00 @ .....

Our English Letter.

Review of the British Iron, Steel, Metal and Hardware Trades.

(From Our Regular Correspondent.)

LONDON, ENG., Oct. 1, 1883.

THE WEEK

has been characterized by a good deal of broken weather, which has not had any beneficial effect on the general course of business, inasmuch as it is said to have been prejudicial to harvesting in Scotland, and has done harm to the potatoes, &c., in this country and Ireland. On the other hand, the bank rate has undergone a further reduction of ½ per cent., and stands at 3 per cent., thereby demonstrating the continued plentiful supply of money, as well as affording additional encouragement to speculators and small traders. In some quarters there is a disposition to believe that the circulation of money induced by the sale of farm produce is already imparting a rather better tone to the retail trades of the provincial districts, as well as to certain of the manufacturing industries of the larger towns, but we have, as yet, no positive evidence on the subject, and I fancy it would be somewhat premature to build hopes upon so slight a foundation. That such a result will come about very shortly is not unlikely, but it is quite open to doubt whether the home market will afford a sufficient amount of support to our manufactures to lift matters out of the dullness into which almost everything appears to have relapsed. The winter season trades are beginning to be more active, however, and those engaged therein are preparing for a larger turnover before long. In some branches, indeed, I hear of very respectable commissions having been placed within the past few weeks. The trades connected with shipbuilding are busy, but orders are increasingly scarce and there are good reasons for supposing that the anchor, chain, cable and ship chandlery branches have a quiet time ahead.

In the iron trade the close of the quarter is always a quiet period, and the present is no exception to the rule. The future of the industry is clouded afresh by the renewed agitation of the coal miners for higher rates of wages. In Scotland and in Yorkshire their demands have been formulated, and are being resisted by the employers, so that only good temper and superior tact can avoid disputes of a more or less serious nature. To other wages matters I allude elsewhere in this communication.

THE IRON MARKET

remains very quiet. At the same time, there are numerous inquiries as to supplies of raw materials and pig iron to extend over the remainder of the year, and it is very probable that the lower rates asked for by buyers will be the means of concluding a number of negotiations between this and the quarterly meetings. The quarter has been a dull one, on the whole, in respect of new business, and the tendency of actual selling prices has been downward throughout, notwithstanding the circumstance that list prices are almost universally unchanged. There is already some conjecture as to the probable course of quotations at the coming meetings, but the general anticipation appears to favor the idea that the list rates will undergo no official alteration. In some respects the situation is no worse than it was a month or so back, but the shipping season is approaching its close, and there is no probability of the general export demand being augmented. The action of the Yorkshire miners in asking for an advance of 15 per cent. in wages has naturally attracted much attention in iron-making circles, especially as a national conference of miners has been convened in order to discuss the same subject. So far as can be seen, the movement is ill-timed and cannot fail to produce serious and protracted disturbances of the labor market if persisted in, which is doubtful, seeing that the Yorkshire miners adjourned their conference for a fortnight "to see how the matter was taken by the country generally." This seems to show that the men are doubtful of the wisdom of their own course of action. The official accountant of the Northern Iron Trade Arbitration Board has certified the average selling price of manufactured iron to have been £6. 2/4 ⅌ ton, which gives a reduction in the wages of the millmen and forgemen of 7½ % from October 1, but leaves the puddlers' wages unaltered at 7/ ⅌ ton. On Saturday last the official accountants of the South Staffordshire Mill and Forge Wages Board certified the average selling-price of bar iron, by the 12 selected firms, during the three months ended August 31 last, to have been £6. 15/7, or 4d. ⅌ ton more than during the previous quarter. This award would have left wages unaltered had not the operatives given notice to terminate the existing sliding-scale. The new scale, or basis, was preliminarily discussed on Friday at Birmingham. Puddlers' wages, 7/6 ⅌ ton, in Staffordshire are not affected by the return in question.

At Glasgow only a very moderate turnover has taken place in warrants, which have been irregular in value, closing on the week, however, at 46/7 ⅌ ton. The business done in Scotch makers' brands is pretty good, and prices are not appreciably lower. Shipments are well sustained, but stocks in the public stores are again increasing. A better inquiry is noted on United States account. At Middlesboro' the market has ruled quiet, and No. 3 is nominally the same as of late at 39/ @ 39/3 ⅌ ton, with some little difficulty in securing good prompt lots. Shipments are on a fair scale, but it is expected that the monthly statistics will not be of a very favorable nature. On the West Coast hematite pigs are dull and in indifferent request at 48/ @ 49/6 ⅌ ton for mixed parcels and in usual proportions, and general makers' brands at 49/6, 49/ and 48/6 for Nos. 1, 2 and 3, respectively. Current deliveries by rail and water are good, but new contracts are said to be very scarce and the export demand poor. Elsewhere all grades of crude iron are about as of late, with a tendency toward rather lower figures for next quarter's deliveries. In heavy manufactured iron there is nothing that is new to record. The mills and forges are well engaged, but prices for futures, especially for ship-plates, are low and nominal. In fencing wire there is no movement, notwithstanding the current low prices. I hear of further German agencies being opened out in London, and am afraid that a very large proportion of the business in wire is lost to our own manufacturers. Galvanized iron is quiet and somewhat irregular in value. In ordinary merchant irons buying is of a hand-to-mouth character, and prices are quite nominal on the basis of £7. 10/ for Staffordshire marked bars. Ordinary Welsh bars for India, &c., are £5. 5/ @ £5. 7/6. North of England shipbuilding bars are £5. 12/6; angles, £5. 15/; Tees, £6. 5/; plates, £6, and ship's knees, £12 @ £14 ⅌ ton, f.o.b. Northern ports. For sheets there is a fair call at £8. 5/ @ £9. 10, while props are £6. 15 @ £7. 10/ ⅌ ton. In tube strips the business on hand is moderate, but the producers of heavy chains, anchors, &c., are well engaged. Iron rails are only inquired after for special purposes. There are some American orders for New York in the market for old flange rails, but the prices offered are said to be below the f.o.b. values of holders. Old bridge rails are being shipped from Ireland to the States. In heavy wrought scrap a somewhat considerable business is reported on United States account, recent shipments being said to have been rather heavy, at 55/ @ 56/6 ⅌ ton, f.o.b. London, &c. Old double-head rails are now quoted 66/ @ 67/

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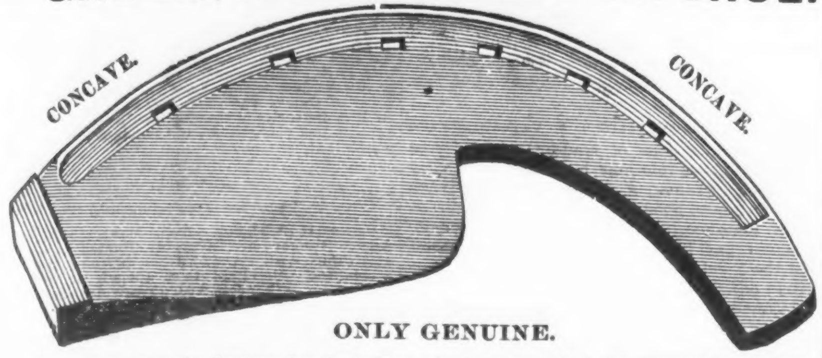

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" 2,	"	"	5½ "	" " "	3½ "
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" 4,	"	"	6½ "	" " "	5 "

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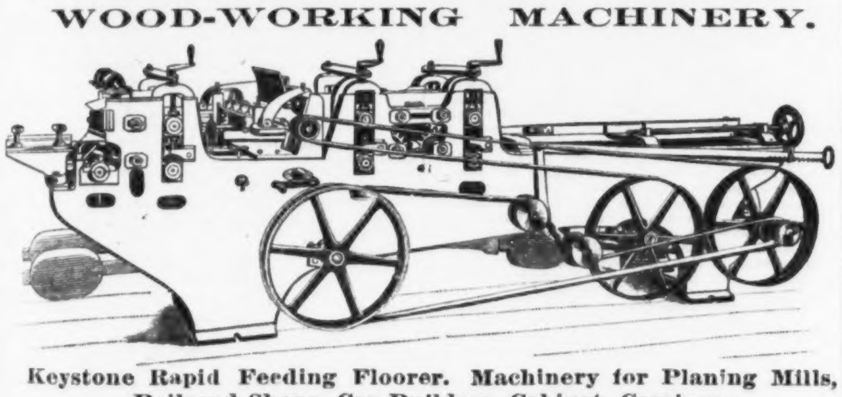

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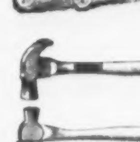

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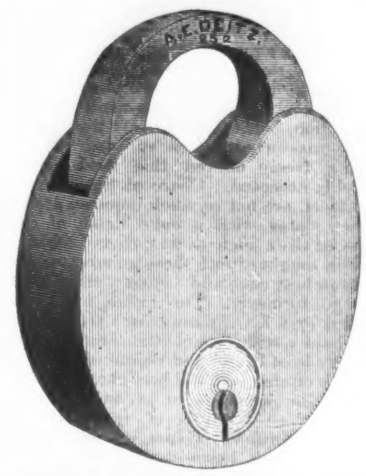

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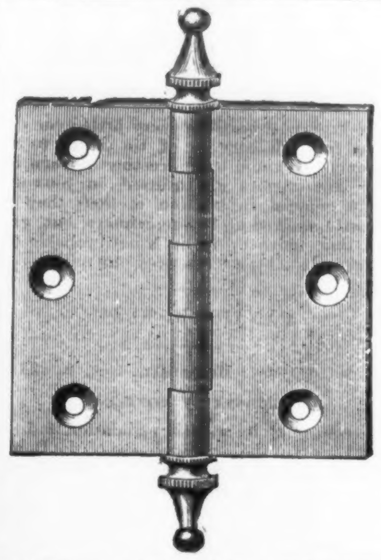

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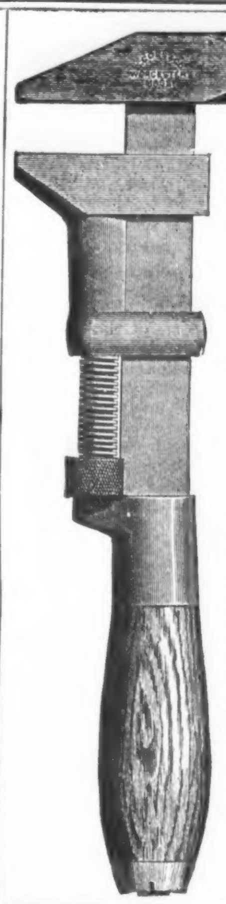

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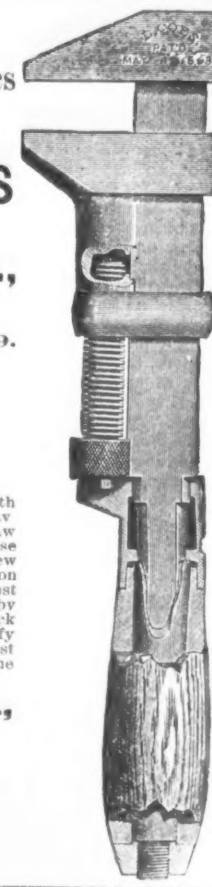

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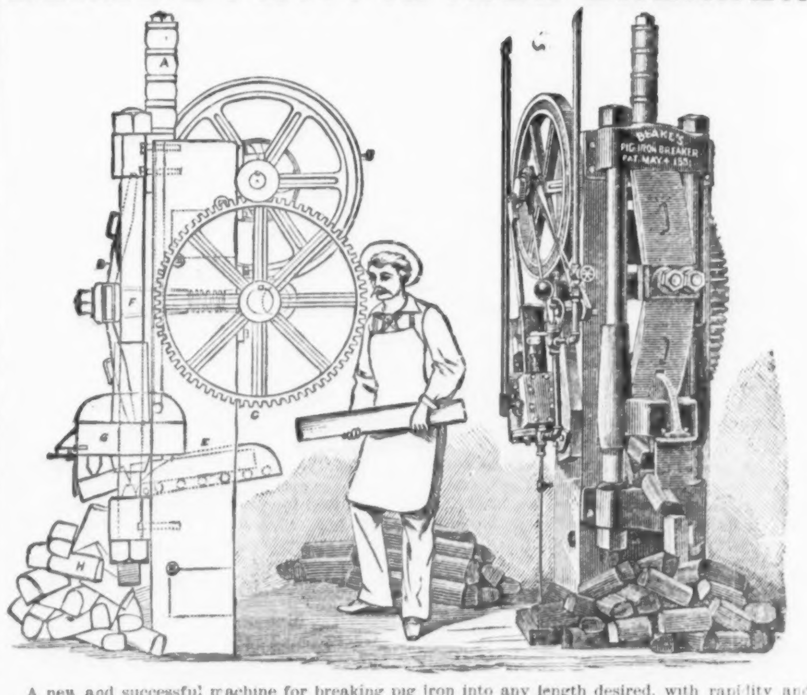

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℘ ton, net cash, f.o.b. London, &c., while old bridge rails are about 62/6 ℘ ton at Irish ports, whence freights range from 6/ to 9/ ℘ ton to your Eastern ports. Steel is in fair request in the home market. Bars are £9; plates, £10; boiler plates, £11. 10/; sheets, £14; hoops, £9. 10/; angles, £9. 5/, and Tees, £9. 15/—all of Bessemer. There is no inquiry for blooms or old railway leaf-spring steel. An order for 5000 tons of steel rods has been placed at £6. 5/ ℘ ton, f.o.b. Antwerp, on United States account, but it is understood that the work will be done in Germany. It is believed that the quantity mentioned forms part of an order for 25,000 tons, and is one of several orders which are usually placed here by large American consumers, so that it is not necessarily indicative of any new departure in this respect. Steel rails are quiet and nominal at late rates. A few orders have been given out, and there are further inquiries for 56-lb "Sandberg" lots, which makers cannot undertake, save for winter deliveries.

SCOTCH PIG IRON

opened very quietly and remained at a low level during the early portion of last week, but closed with some firmness and with warrants several pence higher. This change is no doubt largely attributable to speculative buying consequent upon the lower bank rate, and the probability of the production being interrupted by labor troubles with the miners, but it is also indebted, to some extent, to the quietly circulated rumors of large purchases on United States account. In iron circles here (London) it is asserted that really heavy lots of pig iron have just been bought for your market, but in the absence of confirmatory particulars, I do not pledge myself to the absolute accuracy of such statements. There are now 114 furnaces in blast in Scotland, as against 107 a year ago, while the stocks in Connal's stores now amount to 587,852 tons (an increase on the week of 1235 tons), as compared with 626,221 tons this date, 1882. The shipments last week were 14,338 tons, or 1405 tons increase, while to date this year they have been 480,376 tons, against 470,126 tons last year to date. Importations of Middlesboro' pig iron into Scotland have been 194,650 tons, or 26,901 tons above last year's total to date. Writing from Glasgow on September 29, James Watson & Co. said: "We have to report a firmer tone in our market, due mainly to speculative purchases of warrants, the price of which has rallied 6d. ℘ ton. The shipments continue good, but special brands do not improve in price. The warrant market was steady last Monday at 46/0½ and 46/1 ℘ ton. On Tuesday the price advanced from 46/1½ to 46/3½, cash. On Wednesday a large business was done between 46/2 and 46/6 ℘ ton, and yesterday numerous transactions took place between 46/8 and 46/4½, cash. To-day the market has recovered from 46/5 to 46/7½, cash, closing with sellers at the latter figure, buyers offering 46/7 ℘ ton. The shipments last week were 14,338 tons, as compared with 12,933 tons for the corresponding week of last year." We quote:

	No. 1.	No. 3.
G.M.B., at Glasgow	47/6	45/6
Clyde, "	49/6	47/6
Coltness, "	58/	51/6
Langloan, "	58/	51/9
Gartsherrie, "	55/	51/6
Summerlee, "	56/6	50/6
Calder, "	56/6	49/
Carnbroe, "	54/	48/
Glengarnock, at Ardrossan	54/	47/
Eglinton, "	47/9	44/9
Dalmellington, "	48/3	47/3
Shotts, at Leith	58/	53/6
Kinneil, at Bo'ness	48/6	47/
Carron, at Grangemouth	48/6	47/8

MIDDLESBORO' PIG IRON

has gained nothing whatever in point of value on the week; indeed, some of the makers are now manifesting a distinct disposition to meet the views of buyers, and prompt iron is rather easier to obtain at figures very similar to those quoted for near futures. For No. 3 the average price is 39/ @ 39/3 ℘ ton, and G. M. B., f.o.b. at makers' wharves in the Tees for net cash (less 2½ %) on the 10th of the following month, are:

No. 1 Foundry	43/	Mottled	37/6
" 2 "	41/	White	37/
" 3 "	39/3	Refined Metal	55/
" 4 "	38/6	Kentledge	40/
" 4 Forge	38/	Cinder	34/

The ironmasters' returns for September are not issued at the time of this writing, but it is expected they will show a good comparative increase in the shipments, but possibly no decrease—even *vice versa*—in stocks. The local iron works and shipbuilding concerns are still well engaged—some of the latter having six months' work on hand, as also have many of the engineering establishments in the vicinity.

HEMATITE PIG IRON

is just as dull as when I last wrote about it. Mixed parcels are worth 48/ @ 49/, and West Coast makers' brands are as under, with "possibilities" in favor of large buyers:

	No. 1.	No. 2.	No. 3.
Cleator	54/6	53/6	53/
Lonsdale	50/	49/6	49/
Workington	50/	49/6	49/
Lowther	50/	49/6	49/
Distington	50/	49/6	49/
Harrington	51/	50/6	50/
Solway	50/	49/6	49/
Maryport	50/	49/6	49/

North of England hematites, f.o.b. Cumberland ports, &c., are:

No. or quality.	Ordinary.	Bessemer.
1	...	...
2	51/	51/
3	50/	50/
4, Foundry	49/	49/
4, Forge	49/	49/
Mottled	49/	49/
White	49/	49/

Last week's shipments from the West Coast included 15,401 tons of pig iron and 5616 tons of steel rails. In the official stores at Workington the stock of pig iron is now over 45,000 tons.

FREIGHTS

are irregular and in some instances eased by competition. This is especially the case to the East, South Africa, &c., to which parts of the world more tonnage is offering than can be profitably employed. Pig iron, by ordinary steamers from Glasgow to New York, is about 5/ ℘ ton; to Boston, 8/; to Philadelphia, 7/6; to Baltimore, 7/6, and to New Orleans, 10/ ℘ ton. From Liverpool to New York pig iron is 5/ ℘ ton; sheet iron, 10/; steel rails and blooms, 7/6 and 10 %. Tin plates are 10/ and 10 %, but in some special instances 5/ and 10 % is offered for full cargoes. From London, &c., steamers are also at low rates for your Southern ports, but do not fill readily. By sailing vessels, pig iron from Glasgow is quoted as under: To Baltimore, offers; to Montreal, 12/6; New Orleans, 15/ (from East Coast, 9/;) New York, 12/6; Philadelphia, 12/6 (from East Coast, 10/;) Portland, 13/; Providence, 12/6; Quebec, offers, and San Francisco, 20/ ℘ ton.

WAGES AND PRICES.

Mr. Waterhouse, the sworn accountant to the Northern Board of Arbitration and Conciliation, has forwarded the subjoined return to the Standing Committee of the board:

GENTLEMEN: Having collected from the firms and companies belonging to or associated for this purpose with your board the returns of their sales of manufactured iron during the two months ending August 31, 1883, and having verified the same by an examination of their books, I certify the average net selling price ℘ ton to have been £6. 2/4. Beneath is a statement of the different classes of iron sold, and the average net selling price of each:

Sales during the Two Months ending August 31, 1883.

Description.	Weights invoiced.				Percentage of total.	Average net selling price. Per ton.		
	Tons.	cwt.	qr.	lb.		£	s.	d.
Rails	371	11	0	12	0.34	5	15	10.97
Plates	71,189	1	0	12	65.37	6	5	0.61
Bars	14,793	9	2	23	13.58	6	4	6.57
Angles	22,539	6	1	14	20.71	5	12	5.23
Total	108,893	8	1	5	100.00	6	2	4.08

According to this return, under the Durham sliding-scale arrangement, the average of £6. 2/4 ℘ ton gives 7/ as the rate to be paid for puddling during the two months commencing October 1 and ending November 24, as well as a reduction on other forge and mill wages of 7½ %. The operatives are strongly disinclined to accept this revision, and their secretary, Mr. Trow, has given notice to terminate on December 9 next the arrangement confirmed at Darlington in March last, and to abandon the sliding-scale. Similarly, on behalf of the employers, Mr. Winpenny, their secretary, notifies that after December 29 the employers propose to revert to the practice of working 11 shifts per fortnight in the manufactured iron trade. Notices of the reduction in wages have been posted at the Parkgate Iron Works and other places at Sheffield, &c., which are ruled by the action of the Northern Board. At various steel works in South Wales and Monmouthshire notices have been given of reductions equal to about 10 % in almost all grades of workmen's remuneration. The sworn accountants to the South Staffordshire Mill and Forge Wages Board say: "We beg to report that we have examined the returns of the bar iron of the sizes specified in our instructions sold by the 12 selected firms during the months of June, July and August last with their books, and have fully verified the same. We find that the net average price obtained during that period has been £6. 15/7.03 ℘ ton. There, also, the operatives have given notice to terminate the sliding-scale arrangement, and negotiations are already in progress as to its revision on another basis.

TIN PLATES

are in a peculiar position, both here and at Liverpool, chiefly by reason of the altogether abnormal demand for wasters. The existence of such a heavy call for wasters on this side seems to me to suggest the desirability of exercising a correspondingly increased caution on the part of your buyers. Are those imperfect plates being sold as wasters in your market, or do they reappear in all the glory of new "private" brands? All things are possible—in the tin-plate trade—hence my "word in season." Most of the mills appear to be pretty well engaged and have respectably filled order-books; hence makers are desirous of securing advanced rates. Buyers of prime plates hold back, however, and seem determined not to pay enhanced prices, notwithstanding the general belief that stocks are declining and the scarcity of second-hand parcels. I C cokes, therefore, are 16/ @ 16/3, and coke-tin wasters 15/3 @ 15/6 ℘ box. Only about 1½d. ℘ box separates the parties, and with concessions to that extent by venders it is believed an exceedingly heavy business might be effected at once. A report from Liverpool says: "A good volume of business might still be done at 16/ I. C., but makers are, as a rule, firm in maintaining the advanced quotations of 16/3 and 16/6. But these figures can only be had for specialties, as regards size, &c., and for orders which must be placed, being required for prompt shipment. As a matter of fact, 16/9 and 17/ have been paid for such special orders this week. But for ordinary-size coke tins, such as 14 x 10 and 14 x 20, 16/ seems to be the ruling figure if any one wants to sell. Sales of several thousand at this figure are reported this week, though the terms on which some were placed were slightly varied from the usual ones, those exceptional terms making the figure really better than 16/. Two or three smaller parcels of the better-class brands are again reported as having exchanged hands at 16/3, so that, on the whole, the week closes fairly well as regards firmness of tone, &c., and there are no signs of giving way all round. The only thing is that not a little of the business has been done which might have been done if buyers' and sellers' ideas as to prices coincided. The inquiries have been numerous, and it is known that there are large orders in merchants' hands ready to be placed if makers would accept buyers' limits, but, so far, makers have refused. On the other hand, the American houses have refused to respond to the advanced quotations, excepting, of course, for plates that were absolutely necessary for present requirements, and to fill up their most pressing orders from the other side. This difference in price paid for odd sizes and squares proves not only that there are no stocks of these specialties, but that they must be had; therefore makers get a moderately remunerative price for them. Coke-tin wasters continue at a premium, the demand being enormous, and quite unprecedented. Yet even in these actual business is restricted in consequence of the high prices asked, 15/6 being the lowest quotation to be obtained now. Some few small parcels on spot changed hands this week at 15/4½ for immediate shipment, this being the nearest approach to the advanced quotation that we have heard of. There are plenty of buyers at 15/3, no response being made to the 15/6 quotation. Many buyers are now trying to buy unassorted plates at 15/9, this price being freely offered this week, but not readily accepted. Charcoal tins, either iron or steel, are not so much inquired after, but steel plates with a coke finish, of certain special sizes, such as 20 x 10 and others, are much sought after; these go now to markets where best coke and ordinary charcoals used to go formerly. The prices for these are about 17/6 I. C., sometimes a trifle more and perhaps a trifle less at other times, according to grade of brand and repute of plate. The prices of charcoal and best charcoal tins remain the same, from 18/ to 20/ I. C. All depends on the sort of specification and grade of brand. Ternes are steady, though not so much business done this week; yet prices are firm from 16/ to 17/ I. C., as buyers are well booked forward, but more business would be forthcoming even in these were it not for the higher figures asked, viz., 34/ @ 35/ for C., 28 x 20."

From Llanelly to Liverpool by coasting steamers tin plates cost 5/ @ 6/ ℘ ton, so that the Cardiff shippers have many advantages on their side, and are obtaining a bulky share of the American shipments, notwithstanding that large steamers are offered on Liverpool berths at very little over 5/ ℘ ton for full cargoes of tin plates to New York. It would be interesting to learn how all our wasters are utilized on your side. The general supposition is that they are mostly worked up by the canners, but, great as that industry is, it is not probable that it absorbs all the wasters of our mills.

CANADIAN NOTES.

MONTREAL, Oct. 8, 1883.

THE CITY OF MONTREAL,

by reason of its wealth, population and natural position the principal port of the Dominion of Canada, and the point to which ocean navigation is possible on the River St. Lawrence, may fairly be assumed to sustain the same relations to the commercial body of the country as the heart does to the human body. From this, the commercial metropolis of Canada, as a center, our most important railway systems radiate, ocean vessels here leave their cargoes to be distributed throughout the land, and in turn receive the surplus of the products of this continent for Europe. The largest and most influential commercial houses, manufacturing establishments and banks are here found concentrated. What affects the trade of Canada cannot but react upon the varied interests of the metropolis, and, *per contra*, what affects Montreal must, with the extended ramifications of its trade interests, be felt in some degree by every one at all concerned in trade and commerce. For these reasons I intend to devote this, my first letter, to such matters as may be of interest to the trade viewed from this local standpoint.

THE HARDWARE TRADE

have here three recognized and well-defined seasons of trade, known as the spring, summer and fall. At each of these periods representatives are out for the various wholesale houses. One month of the fall season has just elapsed, and a fair basis may be arrived at regarding the condition of trade throughout the country from the reports furnished by these gentlemen to their principals. They agree in a majority of instances in the statement that the volume of trade is not large; only a fair business is being transacted. The speculative element seems entirely absent. Goods are purchased for the season that they are required. Unfortunately the wheat crop, the principal one of the country, is expected to show a decrease in number of bushels when the results are more accurately known, added to which early frosts have in some districts seriously damaged other crops outstanding; hence with a comparatively poor harvest the trade will not have the stimulus and support which a good harvest always produces.

THE CREDIT SYSTEM

of Canada is its commercial bane and curse. The usual term of credit granted to their customers by the hardware trade is six months. Renewals in whole or part have been the rule, and not the exception, so that our merchants have to perform the double *rôle* of merchant and banker for those to whom they grant such accommodation. As a necessary consequence they are debarred from employing their capital to the most profitable advantage, as would be the case were a shorter term of credit given, as is the custom in the United States. The Civil War is credited with bringing about the change to an approximately cash basis with our neighbors to the south. It arose from the want of confidence engendered in a time of war. We require, and wish most earnestly to see, a change to a shorter term of credit, but hope it will be arrived at without undergoing a similar experience.

STATE OF TRADE.

Messrs. Bradstreet's mercantile reports, which have recently been published, show some gloomy facts and figures regarding our state of trade. It would appear from these reports that in Canada during the last three months there have been 329 mercantile failures, or more than double the number for the corresponding three months of last year. The aggregate liabilities for the last three months are about three times the amount of those for the same period last year—being $5,939,514, as compared with $1,940,565. The average liabilities of each bankrupt have increased from $12,115 in the third quarter of last year, to $15,013 in the third quarter of this year. A comparison of the assets is a more cheerful feature. The assets for the third quarter of 1883 were $3,877,955, against $891,337 for the corresponding quarter of 1882. The percentage of assets to liabilities, which, in that quarter of 1882 was only 46 per cent., is therefore this quarter 65 per cent. This is a high percentage, higher than that of New York even, and constitutes the most cheerful feature of the report. The proportion of failures in the hardware trade, as compared with other equally prominent interests, is very gratifying to those concerned, as they are but few and unimportant.

TRADE RELATIONS WITH THE UNITED STATES

have been a bone of contention for some years. These relations have met with very varying fortunes. A reciprocity treaty, with its attendant good-will, was the outcome in one instance, and latterly the opposite course has been pursued in the adoption of the "national policy," or the "N. P.," as it is popularly called. The party cry was, "Canada for the Canadians! And if the Americans won't give us their market we will prevent them entering ours, except on similar terms to those which they exact on our entering theirs." Personally, I am opposed to the latter policy, and think both countries would be much better off in the removal of the unnatural and arbitrary restrictions imposed upon the free and natural course of trade between them.

THE QUESTION OF COMMERCIAL UNION

with the United States is said, by no less an authority than Prof. Goldwin Smith, to be the question of the future for some political party to espouse. I do not fear, as some do, that if such a union were adopted it would alienate our affections and allegiance from Great Britain. I hope the day is still very far distant when we could not from heart and soul express briefly our attachment by repeating "God Save the Queen." To show the magnitude of our commercial interests with the United States, and how closely they approximate to our transactions with Great Britain, I have made the following extract from our Government statistical reports of imports and exports during the fiscal year ending 30th June, 1882:

GOODS EXPORTED.

Countries.	Produce of Canada.	Not produce of Canada.	Total exported.
Great Britain	$39,816,813	$5,457,117	$45,273,930
United States	41,687,638	1,787,565	43,475,203

GOODS ENTERED FOR CONSUMPTION—IMPORTS.

Countries.	Dutiable.	Free.	Tot. entrd for consum't'n.	Total duty collected.
Gt. Britain	$41,459,730	$9,187,611	$50,597,341	$10,011,811
United States	32,941,061	15,347,991	48,289,052	7,073,912

FOREIGN.

FRANCE.

(*Moniteur des Interets Materiels.*)

PARIS, September 30, 1883.—*Metals.*—The general situation still suffers a little from the uncertainty that attaches to French affairs in the extreme East, but otherwise it is sound; if our cereal crop is not large enough to cover our wants, an abundant vintage compensates for it. Copper and Lead have been lower, Tin and Spelter higher, during the week. We quote at the close, in francs, ℘ 100 kg.: *Copper*—Chili Bars, 161.25 @ 165; Ingots and Slabs, 168.75; Best Selected, 173.25, and Corocoro Ore, 170. *Tin.*—Banca, 258.75; Billiton, 254.75; Straits and Australian, 255, and English, 252.50. *Lead*, 31 @ 31.75, and *Spelter*, 39.75 @ 40. *Iron.*—At length makers in France begin to receive orders of some importance both from the Government and the large railroad companies; the winter campaign is therefore inaugurated under less doubtful auspices. Merchant had sold latterly below 16 francs even in this city, but it cannot now be had under 17 francs, in response to the agreement had on the occasion of the late ironmasters' meeting in the Northern Department, where commands for railroad material have begun to drop in from all quarters. The Northern and Eastern Steel Company have received large Government orders for Steel Hoops; the Orleans Railroad has ordered 600 mounted Wheels and the Eastern Railroad 5000 Hoops. The Southern Railroad ordered from the Chatillon-Commentry Works 1000 Axles, and from the Creusot 15 Locomotive Tenders at 1.70 francs ℘ kg.; the St. Chaumond Works furnish the Government 1200 Hydraulic Brakes for cannon. At the North Merchant Iron advanced 1 franc ℘ 100 kg. Great animation is kept up in the Haute-Marne. The only region in France still quiet in the Iron line is the center. *Coal*, as may be supposed, continues picking up, Domestic included, which gets to be active at 48 @ 51 francs in this city.

BELGIUM.

(*Moniteur Industriel.*)

BRUSSELS, September 30, 1883.—*Iron.*—There is not the least probability of an improvement in prices as long as the amount of work engaged does not on an average extend over a month ahead, as is the case in the Belgian Iron regions for the present. It has to be conceded, however, that the situation is better than it was two months since and that prices are firmer than they were then, but this is not saying much if we consider the season, which was midsummer then, and now we are in the midst of the fall campaign. English Pig Iron remains well supported at 5.75 francs ℘ 100 kg.; Charleroi Foundry Pig at 7, and Luxembourg at 5.80 @ 6 francs. Puddling Pig is firm at 5.50; Common ditto at 4.50 @ 5; Athus-Hallancy, 5 francs. Merchant Iron No. 1 does not vary from 12.50; No. 2 is worth 13.50, and No. 3, 14.50. Beams are offering at 13, and Corners wanted at 14.50. Sheet Iron is in better request at 17 francs, No. 2; 19 No. 3; 23 Commercial; 25 Fine, and 27 No. 4. At an adjudication just come off, Steel Rails brought 13.45 @ 13.50, Cockerill and Thy-le-Chateau furnishing the same. In the export trade there is not much stir, yet we retain our many customers, notably in Netherland India. The subject broached latterly and much discussed in Holland and this country is the formation of a customs union between the two nations, but such a project could not be carried out till the commercial treaties in force with other countries shall have expired for both, so that, at any rate, a speedy realization of similar plans could not be had. *Coal.*—Despite the dullness in the Iron trade Coal continues buoyant.

GERMANY.

(*Borsenhalle.*)

HAMBURG, October 1, 1883.—*Iron.*—The market is still sluggish in our Iron regions, the demand for Pig Iron, as well as Common Finished, having notably diminished, but Sheet Iron is doing very well, especially fine and for boilers, but the general tendency is, if anything, downward. The import of Pig Iron during the first 7 months has been 144,671 tons and the export 136,806; Steel Rails, 1002 tons imported and 101,503 exported; Sheets, 1836 tons imported and 30,062 exported; Wire, 1996 tons imported and 129,867 exported; Tubes, 375 tons imported and 10,290 exported; Castings, 5063 tons imported and 37,367 exported. No official change has been made in quotations, but Puddling Pig is a good deal easier. Our Steel works do not complain. During the 6 months ended March 31 last the production of Thomas-Gilchrist Steel has been in Germany, 152,479 tons; in Austria, 37,476; in France, 5960; in England, 57,900; in Belgium, 12,786, and in Russia, 12,786; together, 279,400 tons. This is a moderate output, considering that Steel production throughout the world last year was 6,500,000 tons. *Metals* have been rather dull in this city. Lead has been weak; we quote English Pig, 14.50 marks ℘ 50 kg.; Sheets, 15; German, 13; Spanish, 16.50; Copper, without anything doing. We quote Drontheim, 71; Lake, 76; Electrolytic, 77 @ 78, and Refined English Ingots, 70. Tin, Banca and Australian, 103 @ 104; English Common, 103 @ 104, and Refined, 105 @ 106; Spelter has been inactive; Silesian, spot and to arrive, is worth 15.15 @ 15.50 marks, all ℘ 50 kg. *Coal.*—There is a steady run of trade and the winter demand has begun to set in. During the first 7 months Germany has imported 1,182,568 tons of Coal, and exported 4,674,127 tons.

HOLLAND.

(*Koch & Vlierboom.*)

ROTTERDAM, Oct. 1, 1883.—*Tin.*—There is greater firmness noticeable, Banca being firmly held on the spot at 57.75, and deliverable from the next sale at 58, while Billiton, spot, is worth 56.50, and on distant delivery 57. Last year at this time the price of Banca was 65.25, and in 1881 it was 58.50. Billiton deliveries (9 months) have been 74,459 slabs, against, last year, 66,139, and Banca 98,494, against 97,217.

AUSTRIA.

(*Austrian Trade Journal.*)

VIENNA, Sept. 30, 1883.—*Iron.*—Makers throughout Austro-Hungary are favorably situated as a general thing, with the exception, perhaps, of a few specialties. Merchant Iron, though at times a little easier, still meets with a ready demand. This being the case, it is not to be wondered at if, in a few instances, for goods more wanted than others an advance is asked; thus, Sheets have been raised 1 florin ℘ 100 kg. in Bohemia. The Hardware trade in the provinces at length shows the degree of activity that had been predicted for this time of the year. The Tendency in Pig Iron throughout Austria proper and Hungary shows a remarkable degree of stiffness. The Hungarian Government railroad has ordered 100 Locomotives in this city, and 1000 Freight Cars in Pesth; the Austrian Government Railroad took 21 Locomotives, 8 of which were taken at Munich, Bavaria; the Northern Railroad 17. Servia wants 12 Locomotives. *Iron* and *Metals* have remained unaltered.

EAST INDIES.

(*Gilfillan, Wood & Co.*)

SINGAPORE, Sept. 30, 1883.—*Tin.*—We have still to report an absence of animation in the general market, but a fair business is reported in Tin for the United States. Upward of 300 tons have been placed since our last report, at prices ranging from $29.60 to $29.80, the former being the value at the close, with a weak feeling current. The market continues very much in the hands of one firm. Shipments for the month will reach 1000 tons; there is a quiet, moderate demand for India and China. *Freights.*—Tonnage is in sufficient supply; for New York, the Elmiranda continues her loading. For Boston no further charters to advise. *Exchange* is firm at 3/8⅝ for six months' sight credits on London. The Priam took for New York 1547 piculs Tin, the Deucalion from Penang, 1261; the Anchises, 1061; and the Peshawar, 504, making total shipments to date 76,217 piculs.

(*Dummler & Co.*)

BATAVIA, Aug. 18, 1883.—*Tin.*—The next Billiton Government auction of 10,000 piculs is to come off on the 29th inst., followed by sales of similar amounts October 30, December 22, February 26, 1884, and April 29. *Iron.*—Swedish—Prices ruling from 9 to 9.75 guilders, according to assortment; lots of any magnitude very difficult of sale. English flat Bars have realized 7.87½; Hoops, Sheets and Corrugated Iron in no demand. English *Copper* Sheathing 67; Yellow Metal, 57; small sales of assorted numbers. *Tin Plates* have realized 12.50; and *Sheet Zinc* 15.50 @ 17; no business transacted in other classes of metals. *Coal.*—Arrivals to consumers continue very heavy; a cargo of Cardiff has found buyers at 21, but sales are difficult to effect. *Petroleum.*—Locally, no business doing, and prices rather weak; total arrivals from New York since January 1, 837,861 cases.

(*Hessenauer & Co.*)

COLOMBO, Sept. 1, 1883.—*Plumbago* has been dull at unchanged values. We quote, in rupees, ℘ ton: Fine Lump, 140 @ 150; Ordinary, 125 @ 130; Chips, 60 @ 70, and Dust, 40 @ 50. Shipments from October 1 to August 15, 102,074 cwts. to England, 205 to Trieste, 755 to Havre, 3016 to India, and 147,425 to the United States—together, 253,475, against last year, 208,026; 174,725 in 1881, and 186,404 in 1880. *Exchange*, 6 months' sight credit bills, 1/8⅜.

(*Schmidt, Kustermann & Co.*)

PENANG, Aug. 25, 1883.—*Tin.*—The market opened at $29.40, but gradually declined to $29.05, in order to finally recover to $29.40, at which figure it closes. Receipts were 8700, of which 4300 were taken for Europe and 3600 for China. Total export so far, 52,751 piculs to England and 31,532 to the United States. *Exchange*, 4 months' bank, 3/8¾.

CHILI.

(*Weber & Co.*)

VALPARAISO, Aug. 6, 1883.—*Copper.*—There is a weaker feeling, and good ordinary Bars are slightly lower. Special brands have been in better request for France and more sustained. Sales, 15,654 quintals, partly Urmeneta, at $17.90 @ $18.02½; Chanaral at $17.80; good ordinary at $17.40, and Schwager at $17.85—equal to £63. 5/7 ℘ ton, with 45/ steam freight to Liverpool. *Nitrate.*—Ideas as to prices have been very much apart, and dealings have been moderate in extent, not exceeding 464,000 quintals, 95 %, at $2.30; 96 % at $2.35, and 97 % at $2.37½. As there are a great many vessels chartered and have to be loaded, prices may improve soon. July export to Europe, 39,000 tons; loading, 33,000 tons for Europe and 2000 for the United States. Charters, 10,803 for Europe; $2.30 is equal to 10/. *Exchange*, 35⅝d. @ 35⅜d.

The importance and magnitude of the manufacturing industries of Lowell, Mass., may be appreciated by the following extracts from the Lowell tax list for 1883:

Merrimac Manufacturing Company	$46,933.33
Massachusetts Mills	32,799.85
Boott Mills	30,890.72
Lawrence Manufacturing Company	30,072.03
Hamilton Manufacturing Company	28,192.41
Tremont and Suffolk Mills	25,257.19
Lowell Manufacturing Company	22,040.52
Lowell Machine Shop	12,342.19
Middlesex Company	12,023.02
Lowell Bleachery	8,173.04
Locks and Canals Company	3,669.96
Belvidere Woolen Mills	2,417.35
Lowell Hosiery Company	2,080.88
Shaw Stocking Company	1,478.96
United States Bunting Company	1,346.72
Stirling Mills	1,086.55

Sidney Shepard & Co., of Buffalo, N. Y., and Chicago, Ill., are directing special attention to their dripping pans made of best smooth iron. Thirteen sizes are manufactured, ranging from 7 x 8 inches, the smallest, to 18 x 19 inches, the largest. The perfection with which machine-made dripping pans are at present produced, and the low prices at which they are sold, make it to the interest of tinners and dealers generally to buy their supply of these goods rather than to manufacture, as was formerly the custom.

The Henry Clay Furnace of Messrs. Eckert & Co., of Reading, Pa., which was furnished with Mr. P. L. Weimer's water jacket some time since, has thus far given most satisfactory results. The jacket surrounds the furnace to the hight of 19 feet 9 inches; it is made in sections, so that if an accident should occur to either section it could be replaced.

It is worthy of remark that most of the imports of pig iron at present consist of hematite pig iron, which is brought here on contract for making Bessemer steel. The large quantity of pig iron reported among the weekly imports is often erroneously supposed to be chiefly Scotch pig iron for foundry use.

Pine Grove Furnace, Pennsylvania, has been averaging 19 tons of forge iron per day, with a consumption of 2160 pounds (120 bushels) of charcoal, the ores yielding 36 per cent. metallic iron.

The Pennsylvania Iron Trade.

The Philadelphia *Press* has just obtained from its special correspondents full and very interesting information about the condition of the iron trade in Pennsylvania. We condense it as follows:

EASTON.

While the iron manufacturing interests in this section keep busy, it is not from a great rush of orders or haste to get work out of the way to give place to many incoming orders, but because of the necessity of most of the mills to keep running with a hope of a better future, deeming it inadvisable to stop. Some firms and companies report business as good, with plenty of work on hand, while others are dull. The Glendon Iron Company have five furnaces, one of which is out of blast. The company own their mines and quarries, and are running full time in all departments. They have considerable stock on hand, and report the future not any too bright or alluring. The Keystone Furnace, at Chain Dam, owned by the Thomas Iron Company, is in blast. The Lucy Furnace, at Glendon, owned by E. P. Wilbur, Henry Green and C. B. Linderman, is out of blast. The Andover Furnaces, at Phillipsburg, N. J., have three stacks, two in blast and one out. The furnaces are superintended by J. C. Kent, who reports the amount of iron on hand as large and little prospect for a good future. The Durham Furnace, on the Delaware, a few miles below here, is in full blast, and has considerable iron on hand. Cooper & Hewitt also own the furnace at Pequest, N. J., now out of blast. The Warren Furnace, at Hackettstown, N. J., Joseph Wharton, of Philadelphia, owner, has been idle six months. Mr. Wharton is also the lessee of the two stacks of the Boonton Iron Works, at Boonton, N. J., both of which are idle. Mr. Wharton also owns a furnace at Port Oram, N. J. It is idle. At Stanhope, N. J., are the two stacks of the Musconetcong Iron Works. These are in blast. The two furnaces at Oxford, N. J., are running. Most of the iron they make is consumed by the nail mills run by the same company. In Phillipsburg the Warren Foundry, having a capacity of 110 tons of cast-iron pipe per day, is running full-handed, with a good lot of immediate orders on hand. Tippett & Wood, manufacturers of railroad turn-tables, stand-pipes and boilers, who give employment to an average of 75 men, have sufficient orders on hand for the present, but report the number of inquiries for work as decreasing in the last two months. They say the outlook is not very favorable. The American Sheet Iron Company, manufacturers of sheet and galvanized iron, employ 150 men, and are running full time. Business is dull, however, and the demand for the future limited. The Delaware Rolling Mill, at Phillipsburg, is idle, being in the hands of an assignee, who is selling off the stock. F. Drinkhouse, iron manufacturer, has considerable work on hand, but cannot see reasons for hoping for a busy future. Stewart & Co.'s wire mills, in South Easton, are not running full time, and only have about 60 men working. They usually have 175 men employed. The Iowa Barbed Wire Company are now building two large structures in which to carry on their business. The works of this company at Johnstown are pushed with orders, and are running 14 hours a day. The works here are being pushed in order to begin to fill the many orders already on hand. The Lehigh Valley Railroad shops have within a short time been greatly enlarged and the capacity doubled by the introduction of new machinery. Employment is given to over 400 men, who are constantly busy in locomotive and car construction. In Easton, Young & Schlough's foundry and Oliver & Co.'s rolling mill are doing "well enough," but report business very dull.

ALLENTOWN.

The seven companies located in and near Allentown, and manufacturing pig iron for the open market, have reduced production from 45 to 100 per cent. of their aggregate capacity. The following figures speak for themselves: The Allentown Iron Company have five furnaces, three of which are out; Crane Iron Company (Catasauqua), with five furnaces, have two furnaces out; Thomas Iron Company (Hokendauqua) have two furnaces out and another going out, which will leave three in blast and three out; Coplay Iron Company (Coplay) have three furnaces, two of which are out and the third to go out soon; the Lehigh Iron Company (Allentown), two furnaces, one in and one out of blast; the Emaus Iron Company (Emaus), one furnace, out of blast; the Saucon Iron Company (Hellertown), two furnaces, both out of blast. Some of these companies have entirely suspended mining operations, and all of them have materially restricted operations at their mines and quarries, which has thrown out of employment large numbers of men at these works. Nor is this depression confined to the pig-iron trade. There is equal depression and unprofitableness in merchant-bar manufacture. The mills which are running are doing so more for the purpose of keeping their men together and holding their best trade than from any expectation of gain.

READING.

Out of the 35 pig-iron furnaces in the Schuylkill Valley but 13 are in blast, as follows: One at Conshohocken, S. Fulton; one at Pottstown, Pottstown Iron Company; two at Birdsboro, Brooke Iron Company; one at Reading, Eckert Bros.; one at Reading, Keystone Furnace Company; one at Temple, Clymer Iron Company; one at Topton, William M. Kaufman & Co.; one at Ringgold, William M. Kaufman & Co.; one at Pottsville, Atkins & Bro.; one at Robesonia, Ferguson, White & Co.; one at Sheridan, William M. Kaufman & Co., and one at Port Kennedy, Montgomery Iron Company. It will thus be seen that the pig-iron men of the Schuylkill Valley are doing their share toward administering the necessary remedy for the dullness of the trade—*i. e.*, a decrease in production. The nail factories in the Schuylkill Valley are all busy, and prices are very fair. There is quite a demand for nails, and stocks are low. In manufactured iron the mills are running ahead slowly, with enough orders to keep them going through the winter. The pipe mills are doing fairly well. In manufactured hardware the trade is duller than was anticipated; still the works are keeping their men employed, in the hope that business will improve toward the holidays. The Philadelphia and Reading Railroad Company's large rail mill is running right along, and the outlook is fair to good. The iron-ore men along the East Pennsylvania Railroad are not doing much. Good ore on the cars is sold as low as $2.50. A few years ago it was $4. Laborers are paid as low as 85 cents. A few of the furnaces now out are preparing to go in, one at Kutztown and one at Reading. Neccessary repairs must first be made. Another reduction of wages has taken place among the employees of the Reading Iron Works, which has seriously affected the pay of the men, as follows: Welders, who received $3.30, were cut down to $2.50; assistant welders, from $1.70 to $1.45; roll-overs, $1.50 to $1.25, and other laborers in proportion. At the bending furnaces the head men were reduced 25 cents, and their assistants 15 and 13 cents. The butt welders were reduced from $2.50 to $1.88; the assistant welders from $1.75 to $1.35; bricklayers, 10 cents a day each, and engineers, 10 cents per day. The officials say that this "equalization" of wages was made necessary, owing to the dullness in trade. The men, while deeply regretting the reduction, seem to be reconciled to the necessities of the case and accept the situation without any apparent disposition to make trouble. The welders suffer most severely, their pay being reduced 80 cents. Not long ago this class of labor made as high as $5 per day. Now they receive but half that sum.

CHAMBERSBURG.

Franklin County has six furnaces, namely: Falling Spring, C. Burkhart & Co., located at Chambersburg; Mont Alto Iron Company, at Mont Alto; Mount Pleasant, South Penn Iron Company, at Richmond; Carrick, Bland & Spang, at Carrick; Franklin, Hunter & Springer, at Edenville, and Stevens, estate of Hon. Thaddeus Stevens, along South Mountain, about 10 miles east of Chambersburg. Of these only two are now in blast—the Mont Alto and Carrick. Stevens Furnace has not been in operation since the war, as some of the buildings were burned by the Confederate forces, and they have never been rebuilt.

SCRANTON.

The Lackawanna Iron and Coal Company have four of their five furnaces running at their full capacity, and the fifth, which is undergoing repairs, will be started up as soon as it can be made ready for operations. The officers of the company explain that they do not suffer from the prevailing dullness, for the reason that the company do not depend upon the general market for their orders, having a regular and slightly varying trade among old corporations whose needs are constant. The company expect to pile some rails during the winter for the spring demand, but this is not unusual.

CHESTER.

Richard Peters, Jr., of the South Chester Rolling Mills, the largest iron manufactory in the city, said that they are running all the departments of their mills—that orders are lively, but prices are low. Bridge and ship iron are the principal commodity in demand, but figures are close, making the margins very small. Their blast furnace is making from 90 to 100 tons of Bessemer pig iron daily, and what they do not use is soon sold, and they are not now carrying any surplus stock of pig iron. A. D. Hepburn, secretary of the Chester Pipe and Tube Works, said that there was no trade at all in manufactured iron in their line, and that they might as well not run, so far as the demand is concerned. About one-fourth of their mills is running. Charles A. Weed, general manager of the Combination Steel and Iron Company, says that in their branch—bar iron—trade is stagnating, with a poor prospect ahead. Their mill is idle, but with a prospect for some work next week.

William H. Dickson, treasurer of the Eureka Steel Company, says that trade all summer has not been as brisk as it was last May. Their works are running in all departments, but with fewer hands than last spring.

Wetherill & Co., the Chester Steel Castings Company, the Vulcan Works and other smaller works are all in operation, but not employing their entire complement of hands.

HUNTINGDON.

No furnaces have been blown out, but none have been kept in blast for the profit of running them. At Lucy Furnace, near Mount Union, arrangements have been made by which the laborers may earn and be furnished the necessaries of life during the winter. At Barree Iron Works the furnace and forge are both being run for the purpose of working up the present stock of material, and, when these are exhausted, which will be in a few months, the works will stop. The large furnaces at Riddlesburg, Saxton and Orbisonia are producing but the minimum quantity of iron, and a market can scarcely be found for that. There is, however, a disposition on the part of their owners to continue in operation, and to hope for a better state of trade without attempting to bring it about by ceasing production.

NORRISTOWN.

There is great activity here among the iron industries. All the furnaces and rolling mills are running full time excepting one. Orders are plenty, but the prices are very low. James Hooven & Son are the leading iron manufacturers. Their blast furnace, pipe mill and two rolling mills employ 250 hands on full time. J. H. Boone employs 165 hands in manufacturing boiler plate, skelp iron and muck bars. R. S. Newbold & Son, proprietors of the Eagle Works, are running on full time. Their orders date a month ahead. Their prospects are good for six months' busy work. The works of the Standard Iron Company have been idle since the 1st of March

POTTSTOWN.

The iron trade is in fair condition in Pottstown and the vicinity. No furnaces have been blown out. The furnaces of the Pottstown Iron Company and Warwick Iron Company are running constantly. The Glasgow Iron Company, with their two mills, have plenty to do, although new work is not coming in so rapidly as it had been. The works of the Pottstown Iron Company and the mills of the Potts Bros.' Iron Company, Limited, are all running steadily.

HARRISBURG.

The Lochiel Furnaces are idle, although there has been talk of starting one of them shortly. One of the Paxton furnaces is running on full time, but the other remains idle. The Wister Furnace ceased operations some time ago and there is no prospect of an early resumption of work. Dock's Furnace below the city is now being operated by the Pennsylvania Steel Company. This comprises the list of furnaces in this vicinity. The Central Rolling Mill is running on full time, as is also the Chesapeake Nail Works and rolling mill, operated by the same firm, Charles L. Bailey & Co. The Lucknow Forge of Reily & Seidel, two miles north of the city, is on full time and production. The Paxton Plate Mills are running steadily. At the Pennsylvania Steel Works the furnaces, frog and switch department and rail mill are running day and night to fill heavy orders, and the production never was greater nor the company more flourishing than at present. The Harrisburg Nail Works, in Fairview, on the opposite side of the Susquehanna, are running on full time. The Buchanan Furnace, a small affair, which manufactures iron from the refuse slag of the other furnaces, is running heavily and proves itself a mint to the proprietor.

POTTSVILLE.

In Schuylkill the iron trade is in good condition. The industrial shops are all in full working order, and idle places are resuming work. The Schuylkill Haven Rolling Mill, which had been idle all summer, recently resumed. Port Clinton is now being repaired with the same object in view, and at Tamaqua there has been a resumption of idle work. The Fishback Rolling Mill, at this place, is full of orders, and Mr. Atkins was busy preparing to blow in the only idle one of the three Pioneer furnaces when the recent fire occurred, and postponed that event for a short time. The colliery repair shops of the Philadelphia and Reading Coal and Iron Company are being enlarged, and will in a few weeks be in condition to take on several hundred more hands. They now employ 500 men and boys. George Wren, at Mahanoy City, has made a contract for heavy colliery machinery for a new opening in the bituminous region and Gartley & Fox, at Minersville, are full handed. The same tale is told at other places in the county.

PITTSBURGH.

The iron trade in this vicinity is in what might be termed a fair condition. The volume of business is large. The mills and furnaces, with but few exceptions, are in operation, with many working up to their full capacity, and the only cause of complaint is the continued depression in prices. Nail manufacturers report an increased demand during the past two weeks. They have about all they can do to fill orders, and believe that the trade will be at least fair until the close of the year. Pig iron, which has been unusually depressed, is reported as looking up. Furnacemen are hopeful that before long they will be able to obtain an advance of from 50 cents to $1 per ton. The furnaces in this city and its immediate vicinity are nearly all in blast, and it is stated that the entire stock on hand does not exceed 5000 tons.

ERIE.

The condition of the iron manufacturing industry in Erie and vicinity is not worse than it was last year at this time. The Mount Hickory Rolling Mills, which were shut down in April for lack of business, started up in September, and are running double turn. While the margins are close, the prospects are good for the future. Manufacturers of iron goods in Erie and vicinity are, as a general thing, sanguine of fair times. While one engine and boiler works is running but eight hours a day, another is running full time, and five establishments, representing several millions of dollars, are either rebuilding or enlarging their capacity. The brass foundries are running day and night, and the stove foundry men report that their trade this year has increased about 15 per cent. over last year's business, which may possibly be accounted for by the severity of last winter, which had depleted the stove market. The outlook to manufacturers, however, is not so brilliant as to cause them to provide raw material beyond present use. At Girard a large wrench works is about to increase its capacity 50 per cent. An agricultural implement manufacturing establishment is also increasing its capacity. Manufacturers generally do not anticipate stagnation in the near future.

MT. CARMEL.

The iron works in this neighborhood are all doing a fine remunerative trade, and have sufficient orders to warrant steady work all year and far into 1884. No furnaces have been blown out. All are active and doing good business.

CARLISLE.

The Cleversburg furnace, located at Cleversburg, in this county, near the Franklin County line, owned by Diffenderffer & Co., of Lancaster, has been out of blast for some weeks for repairs, but was blown in on the 8th inst. It is a cold-blast charcoal, with a capacity of 35 tons weekly.

ALTOONA.

A prominent manufacturer says: "I can see nothing in the situation to encourage us. This ought to be the busy season, but orders are very light, and prices are so unsatisfactory that we do not care for orders from a distance." Only one furnace in this county has recently blown out. It is owned by the Blair Iron and Coal Company, situated at Hollidaysburg, and has a capacity of about 175 tons per week.

WILLIAMSPORT.

The iron manufacturing establishments of this place are all running with full force at present, but trade is not brisk, and the outlook is not specially promising. A new nail mill has been discussed, and may be started before long.

MAUCH CHUNK.

The Carbon Rolling Mill, at Weissport, Carbon County, has not been working for some months. They employ from 50 to 60 hands. The place is now closed. At Parryville the furnaces are now working on full time.

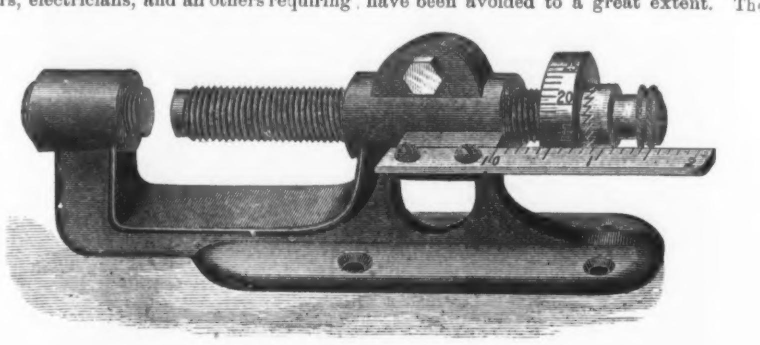
GREENSBURG, OHIO.

There is but one furnace in this county and that is stationed at Scottdale and is running full time. Its position in the coke district gives it an advantage over furnaces distant from the coking and coal fields.

New Bench Micrometer.

The accompanying illustration represents Church's Improved Bench Micrometer, a tool which was patented May 23, 1883, by George W. Church, of the firm of Montgomery & Co., 105 Fulton street, New York, who says in regard to it: "The object of my invention is to provide a micrometer gauge in which the measuring bar may be forced against the object to be measured, always with a certain uniform pressure, thereby rendering the instrument more accurate than heretofore. Another advantage of the improvement is that there will be no danger of causing the ends of the measuring bars to be embedded in, so as to indent the object being measured."

This tool is intended for sewing-machine manufacturers, machinists, jewelers, watch makers, electricians, and all others requiring accurate and positive gauging of diameters and thicknesses of interchangeable work—watch and clock work, sewing-machine parts, &c.—where a variation of $\frac{1}{1000}$ inch or less will spoil the accuracy of fits; it is easily and quickly adjusted for gauging sizes from zero to 2 inches. The screw is accurately cut to 20 pitch, and the disk has 50 divisions, indicating thousandths of an inch. The scale graduations are to tenths of an inch, one turn of the screw opening the jaws $\frac{1}{20}$ or $\frac{50}{1000}$. Both the disk and scale are brought on a plain sight-line while using the gauge in any position, and are read easily and correctly, without the figuring or mental arithmetic necessary on finer screws. The tool is quickly set as a positive caliper gauge by turning the clamp bolt and locking the screws in any position, when it becomes impossible to throw out of adjustment until necessary to alter to a new gauge-size. The screws are of cast steel, and with broad, hardened faces. In the using of the patent thumb-nut, when screwing and coming in contact with the article to be gauged, the ratchet will throw off and release the power applied and leave the proper size. Four holes are drilled in the bottom to fasten to any bench or upright. The opening below fixed screw point, being square, will permit gauging of the finest material $1\frac{1}{4}$ inches from center.



New Bench Micrometer.

The Government's Old Guns.—Some interesting particulars have recently been published relative to the Government's old guns, a large number of which accumulated during and after the late war. From these it appears that the old muzzle-loading small arms were purchased by Grand Army posts, military companies and private individuals all over the United States. One lot of over 80,000 Enfield muskets were sold to an English firm at $1.25 each. The firm have been trying to speculate with them ever since. The lot has been offered to several South American republics, but they yet remain unsold. The supply of old flint-lock muskets in possession of the Government is very limited, but, strange to say, these primeval pieces are still in demand. Any number of them can be sold in Africa, where they are popular on account of the presence of flint there in abundance and the entire absence of percussion-cap factories. The number of old arms on hand in the Government arsenal will aggregate 100,000 of all kinds. They are being sold at prices ranging from 25 cents to $1 each. The latter priced pieces are complete and the former either incomplete or badly rusted. Over two-thirds of the Grand Army of the Republic posts in this country have been supplied from the collection of Belgian and Austrian muskets used during the first part of the war. These posts and numerous military companies have also been equipped with old waist belts, plates, bayonet scabbards and cap boxes. The above equipment complete, with gun, is sold at $1.40. When new the same guns cost the United States from $14 to $15 each. Hundreds of cavalry sabers, which "flashed in the sunlight" on many a memorable field, are sold for $1 apiece, the belts and plates costing 25 cents additional. Sporting dealers are rapidly buying up all the old smooth-bore muskets, for which they pay $1. In many instances they are sent to England or France and converted into breech-loaders.

The Pittsburgh Steel Casting Company's Drop Test.—On page 23 of our issue for the 4th inst. occurs the statement that a "special refined Bessemer" steel axle made by the Pittsburgh Steel Casting Company had been subjected to repeated severe drop tests without a fracture, "a 1640-pound weight being allowed to fall upon it at intervals from a hight of 27 inches." A note from Mr. F. N. Hoffstot, secretary of the company, informs us that the hight of the drop was 27 feet, which makes quite a difference in the nature and severity of the test, and is an infinitely greater proof of the good quality of the steel.

The first annual convention of the National Association of Stationary Engineers has been held in Chicago. The object of the association is the self-improvement of its members and the elevation of the trade. The association is opposed to everything savoring of trade-unionism, and its constitution prohibits it from taking part in any strike movement.

NEW PUBLICATIONS.

WORKSHOP RECEIPTS. By R. Haldane. Second series; 485 pages; size, 7¼ x 5 inches. Published by E. & F. N. Spon & Co. Price, $2.

Almost every one is acquainted with the first of this series, popularly known as the "Spon's Receipts." Among the almost numberless books of this character it held a very high place, though not beyond the reach of criticism, and still is the standard by every one who wants a good library, and reference has been more freely made to it than to almost any similar work published within the last decade. This new work has been brought out under the encouragement of the remarkable success of the original. Like the former work, it has been divided into chapters, many of which appear to have been prepared with a great deal of care and under the immediate eye of one thoroughly posted. The chapter on cements is very useful, and the numerous stereotyped errors usually found in books of receipts have been avoided to a great extent. The author has also avoided, in most instances, the fault of giving a recipe without any instruction regarding its value or the way in which its ingredients are to be used. The chapter on cleaning, which is made to cover everything from skins to clothing, seems to be a very good one. The same is also true of the one on copying, which includes almost all the recent methods for producing writing, engravings, &c., by the photographic and mechanical methods now so popular. Taken altogether, we regard this as one of the most valuable additions in its line which we have recently made to our library.

THE MACHINISTS' AND STEAM ENGINEERS' PRACTICAL CALCULATOR. By D. B. Dixon. 300 pages; size, 3½ x 5 inches. Published by D. Van Nostrand.

As its title indicates, this is devoted almost exclusively to rules and examples for calculation. Among the subjects treated of we find fractions, numeration, proportion, involution and evolution, the extraction of roots, mensuration, screw-cutting, pumps, the steam-engine indicator, the injector, steam boilers and steam engines. Under the latter head are taken up the link and valve motions. As far as possible the work has been simplified and the rules brought out to such a form as to be easily handled.

MODERN AMERICAN LOCOMOTIVE ENGINES. By Emery Richards, M. E. Published by Henry Carey Baird & Co. Size, 5 x 8 inches; 383 pages; 78 illustrations. Price, $2.

This is, as the preface tells us, an attempt to supplement the author's previous works on steam engineering and complete the series. The scope of the work covers steam, its properties; steam engineering, theoretical and practical; the properties of water; economy of fuel; the quality of steam; mechanical powers, including virtual velocity; the first railroads; locomotives; the construction of locomotives; high railway speeds; recent improvements in locomotives, and, lastly, the strength of boilers, link motions and slide-valve. After this we have two chapters, one on pistons and rings and the other on injectors. A chapter is devoted to the management of locomotives, followed by another on the keeping-up of main and side rods. A chapter is also devoted to what to do when a locomotive breaks down, and how much a locomotive is pulling. There is a short chapter on engine-running, and another devoted to useful hints. The introduction contains some things which are somewhat puzzling to the scientific reader, and in the future editions might, we think, be rewritten to advantage. The more practical chapters in regard to dimensions seem to be eminently satisfactory, and the same is true of many of the following chapters, but that on "The Management of a Locomotive" is defective. It covers less than three pages, and to have been useful should certainly have been ten times as long. More space could have profitably been given to details, which would be expected in a book having such a title. The chapter on "High Railway Speeds" is of interest, as it puts on record some interesting facts gathered, we understand, by Mr. W. Barnet Le Van, of Philadelphia. The book is well illustrated, printed from good type and on good paper.

Exports of Petroleum.—According to a statement issued from the Bureau of Statistics at Washington, the exports of petroleum and petroleum products from the United States have been as follows for the month of August and the eight months ended August 31, as compared with the corresponding periods of 1882:

	Month of August.	
	1883.	1882.
Gallons	49,580,807	44,011,074
Value	$4,220,232	$3,599,440
	Eight months.	
	1883.	1882.
Gallons	344,892,907	350,098,750
Value	$30,917,782	$30,946,856

WHOLESALE METAL PRICES, October 17, 1883.

(For Wholesale Hardware Prices See Pages 35, 36.)

METALS.

IRON.—Duty: Bars, 8-10¢ to 1 1-10¢ ℘ ℔; provided that no Bar Iron shall pay a less rate of duty than 35 ℅. Sheet, 1 1-0¢ to 1 5-10¢ ℘ ℔. Band, Hoop and Scroll, 1¢ to 1 4-10¢ ℘ ℔. Pig and Scrap, 3-10 of 1¢ ℘ ℔. Plate, 1¼¢ ℘ ℔. Railroad Bars weighing more than 25 ℔ ℘ yard, 7-10 of 1¢ ℘ ℔.

American Iron.

Foundry No. 1	℘ ton	$20.50 @ 23.00
Foundry No. 2	℘ ton	19.00 @ 20.00
Gray Forge	℘ ton	18.00 @ 19.00

Scotch Iron.

Carnbroe	℘ ton	22.00 @ 22.50
Coltness	℘ ton	23.25
Shotts	℘ ton	22.75 @ 23.00
Glengarnock	℘ ton	22.00 @ 23.00
Garsherrie	℘ ton	23.00
Langloan	℘ ton	23.25
Summerlee	℘ ton	22.50 @ 23.00
Dalmellington	℘ ton	21.00 @ 21.50

Rails.

Steel, at Eastern mills	℘ ton	37.00 @ 38.00
Old Rails, Ts	"	21.50 @ 22.50

Scrap.

Wrought, ℘ ton, from ship and yard. 23.00 @ 24.25

Bar Iron from Store.

Common Iron:
¾ to 1 in. round and square...; 1 to 6 in. x⅜ to 1 in. ... ℘ ℔ 2.10 @ 2.20¢
Refined Iron:
¾ to 2 in. round and square...; 1 to 6 in. x⅜ to 1 in. ... ℘ ℔ 2.25 @ 2.40¢
1 to 6 in. x¼ and 5-10 ... ℘ ℔ 2.50 @ 2.60¢
Rods—⅝ and 11-16 round and sq. ... ℘ ℔ 2.40 @ 2.50¢
Bands—1 to 6x3-16 to No. 12 ... ℘ ℔ 2.70 @ 2.80¢
Norway Nail Rods ... 5 @ 5¼¢

Sheet Iron.

		Common American.	R. G. American.
Nos. 10 to 16	℘ ℔	3.15 @ 3.30¢	4⅛¢
17 to 20	℘ ℔	3.40 @ 3.65¢	4½¢
21 to 24	℘ ℔	3.65 @ 3.75¢	4½¢
25 and 26	℘ ℔	4.00 @ 4.25¢	4¾¢
27	℘ ℔	4.12½	4¾¢
28	℘ ℔	4.25 @ 4.50¢	5 ¢
		B. B.	2d qual.
Galvanized, 10 to 20	℘ ℔	6¾¢	6 ¢
Galvanized, 21 to 24	℘ ℔	7¼¢	6½¢
Galvanized, 25 to 26	℘ ℔	8 ¢	7 ¢
Galvanized, 27	℘ ℔	8½¢	7½¢
Galvanized, 28	℘ ℔	9 ¢	8 ¢
American Russia	℘ ℔	10½¢	B, 9½¢
Russia	℘ ℔	14¢ @ 15¢	
America Cold Rolled B. B.	℘ ℔		7½¢

Iron Wire.—*See Wire.*

STEEL.—Duty: Ingots, Bars, Sheets, &c., valued at 4¢ ℘ ℔ or less, 45 ℅ ad val.; valued above 4¢ and not above 7¢ ℘ ℔, 2¢ ℘ ℔; valued above 7¢ and not above 10¢ ℘ ℔, 2¾¢ ℘ ℔; valued above 10¢ ℘ ℔, 3¼¢ ℘ ℔. *Extras.*—Steel Bars, Rods, &c., cold hammered or polished, in any way in addition to ordinary hot rolling, ¼¢ ℘ ℔ in addition to above; Steel Circular Saw Plates, 1¢ ℘ ℔ in addition to the above.

American Cast Steel.

For American Steel see Pittsburgh quotations.

English Steel.

Best Cast	℘ ℔	15½¢
Extra Cast	℘ ℔	16½¢
Circular Saw Plates	℘ ℔	16 ¢
Round Machinery, Cast	℘ ℔	10 ¢
Swaged, Cast	℘ ℔	18 ¢
Best Double Shear	℘ ℔	15½¢
Blister, 1st quality	℘ ℔	13 ¢
German Steeel, Best	℘ ℔	11 ¢
2d quality	℘ ℔	10 ¢
3d quality	℘ ℔	9 ¢
Sheet Cast Steel, 1st quality	℘ ℔	15½¢
2d quality	℘ ℔	14½¢
3d quality	℘ ℔	12½¢

TIN—Duty: Plates, Sheets, Tagger and Terne, 1¢ ℘ ℔; Bars, Block and Pigs free.

Banca	℘ ℔	@ 23½¢
Straits	℘ ℔	@ 22½¢
English	℘ ℔	@ 23 ¢
Bar	℘ ℔	@ 24 ¢

Charcoal Tin Plates.

I C 10x14, I C 12x12, 225 sheets	℘ box	$6.00 @ $6.75
I C 20x28, 112 "	℘ box	$12.50 @ 13.50
I X 10x14, I X 12x12, 225 "	℘ box	7.50 @ 8.00
I X 14x20, 112 "	"	7.50 @ 8.00
D C 12½x17, 100 "	"	6.00
D X 12½x17, 100 "	"	7.75
For each additional X add	"	2.00

Coke Tin Plates.

	Best.	Ordinary.
I C 10x14, I C 14x20	$5.75	$5.25 @ $5.50
I C 12x12	6.00	5.75
I C 10x20, gutters, 225 sheets		8.50
I C 20x28, 112 sheets		11.50

Terne Plates.

	Prime Char.	2d quality.	Coke.
I C 14x20 M. F.	@ 7.75		
I C 14x20	$5.50 @ $5.62½	$5.50	$5.25 @ $5.37½
I X 14x20	7.50		
I C 20x28	11.25	11.00	10.25 @ 10.75
I X 20x28	14.50		
I C 20x200	13.50		

Tin Boiler Plates.

IXX 14x26, 2 sheets for No. 7, 112 sheets	@ $13.50
IXX 14x28, 2 " " No. 8, "	@ 14.50
IXX 14x31, 2 " " No. 9, "	@ 16.00

COPPER.—Duty: Pig, Bar and Ingot, 4¢; Old Copper, 3¢ ℘ ℔. Manufactured (including all articles of which Copper is a component of chief value), 35 ℅ ad valorem.

Ingot, Lake	℘ ℔	15½¢ @ 16 ¢
Ingot, Baltimore	"	14¾¢ @ 15 ¢
Braziers' Copper, ordinary sizes, 16 oz. ℘ sq. ft. and over	"	@ 25 ¢
Braziers' Copper, ordinary sizes, under 16 oz. and over 12 oz. ℘ sq. ft.	"	@ 27 ¢
Braziers' Copper, 10 oz. and 12 oz. ℘ sq. ft.	"	@ 30 ¢
Lighter than 10 oz. ℘ sq. ft.	"	@ 32 ¢
Circles less than 84 in. in diam.	"	@ 28 ¢
" 84 in. diam. and over	"	@ 31 ¢
Segment and Pattern Sheets	"	@ 28 ¢
Locomotive Fire-Box Sheets	"	@ 26 ¢
Sheathing Copper, over 12 oz. ℘ sq. ft.	"	@ 24 ¢
Bolt Copper	"	@ 26 ¢
Copper Bottoms., 14x48	"	@ 26 ¢
Tinned Sheathing, 14x28, 14, 16, 18 oz.	"	@ 26 ¢
Tinned Sheathing, Planished, 14 x48, 14, 16 oz.	"	@ 34 ¢
Tinned Sheathing, Planished, for boilers, 7, 8, 9 oz.	"	@ 36 ¢
Nickel-Plated Sheathing	"	@ 38 ¢
" " for boilers	"	@ 40 ¢
Plating extra	"	25 ¢ @ 40 ¢
Flat Copper Boiler Bottoms or Pit Bottoms, cut to special sizes	"	@ 28 ¢

Tinning.

14x48, by the case ... ℘ sheet, 8¢
14x48, less than case ... " 10¢
For tinning both sides, double the above amount.

O'Neill's Patent Planished Copper.—Net.

14x48
12 and 16 oz. and heavier..35¢ By the case..℘ ℔ 34¢
12 oz. and lighter ... 38¢ " " .. " 37¢

Boiler Sizes.

7 in., 14x52. 8 in., 14x56. 9 in., 14x60.
14 and 16 oz. and heavier..37¢ By the case..℘ ℔ 36¢
(And all sizes not over 20 in. wide.)
24x48 and 30x60.
14 and 16 oz. and heavier ... ℘ ℔ 39¢
12 oz. ... " 42¢

Copper Wire.—(*See Wire.*)

Sheathing Metal.

Yellow Sheating Metal, ℘ ℔ ... 20 @ 23¢

BRASS AND GERMAN SILVER.

Brown & Sharpe's Gauge the Standard for Metal; Old English Gauge the Standard for Wire.

BRASS MANUFACTURERS' PRICE LIST.—Dis. 35 ℅.
For less quantity than 100 ℔, add 3¢ ℘ ℔.

High Brass.

All Nos. not thinner than No. 28, wider than 2 in., not wider than 14 in ... 30¢
All Nos. to No. 28, inclusive, and widths over 14 to 20 in., inclusive ... 35¢
All Nos. to No. 28, inclusive, and widths over 20 to 30 in., inclusive ... 38¢
½¢ ℘ ℔ advance on each No. above Nos. 28 to 38, inclusive.
All Brass thinner than No. 38 is Platers' Brass, at 53¢
Sheets 24x48 in., and all sheets cut to particular sizes and lengths under 30 in., in width wider than 2 in ... 37¢
Printers' Rules ... 45¢
Sheets wider than 30 in. and under 40 in ... 47¢
" " 40 in. and over ... 50¢
Circular sheets, in diam. from 4 in. to 14 inclusive ... 40¢
" " over 14 " 20 " ... 45¢
" " " 20 " 30 " ... 49¢
" " " 30 " 40 " ... 55¢
" " " 40 in. ... 59¢

Low Brass.

Four cents ℘ ℔ more than High Brass.
Gilding Metal 8¢ ℘ ℔ more than High Brass.
Platers' or Gold Metal: In Bars ... 48¢; Sawed ... 51¢; Planed or Polished ... 54¢

FOR SLITTING.

Metal, in width 2 in. to ½ in. to No. 28, inclusive, 1¢ ℘ ℔ advance.
Metal, in width 2 in. to 1 in. thinner than No. 28, 2¢ ℘ ℔ advance.
Metal, in width 1 in. to ½ in. thinner than No. 28, 3¢ ℘ ℔ advance.
Metal, in width ½ in. to ¼ in., inclusive, not thinner than No. 28, 2¢ ℘ ℔ advance.
Metal, in width ½ in. to ¼ in. thinner than No. 28, 5¢ ℘ ℔ advance.
Metal, ¼ in. in width and less, 10¢ ℘ ℔ advance.
Any of the above widths cut to particular lengths, add 7¢ ℘ ℔.

Tubing.—Dis. 30 ℅.

Plain to No. 20, inclusive, above ¼ in. to 3 in. .. $0.43
" above 3 in ... .58
Nos. 21, 22, 23, 2¢ advance on List for each Number.
Nos. 24, 25, 26, 4¢ advance on List for each Number.
Above No. 26 special rates.
Plain ¼ in ... $0.70
" 3-16 in ... 1.10
" ⅛ in ... 1.60
All Mandrel Drawn Tubes, 5 cents advance on List Prices.
Fancy Tubing to No. 20 ... .50
English, Scotch and Extra Patterns Fancy Tubing to No. 20 ... .55
Tubing Sawed or Cut 2 to 4 feet long, 2¢ advance on List.
Add 2¢, ½¢ for each additional cutting under to 2 feet.
All Mandrel Drawn Tubes under ⅜ in., 25¢ ℘ ℔ advance.

Miscellaneous.—Dis. 30 ℅.

Brass Pail Ears ... $0.50
Brass Door Rail ... .43

Scrap.—Net.

High Brass ... $0.10
Low " ... .11
Gilding ... .13
Turnings, Filings and Chips half the price of Scrap.
Terms—Net cash. Interest to be added after thirty days.

Brass Wire.—*See Wire.*

German Silver Tubing.—dis. 30 ℅.

4 Per cent	.80	15 Per cent	1.35
6 Per cent	.90	16 Per cent	1.45
9 Per cent	1.00	18 Per cent	1.50
12 Per cent	1.20	20 Per cent	1.60

German Silver Market Metal and Wire.

Dis. 30 @ 35℅.

	Market Metal.	Wire.
4 per cent., 12 in. to No. 26	$0.52	$0.70
6 " " "	.56	.76
10 " " "	.64	.88
15 " " "	.74	1.03
18 " " "	.80	1.12

German Silver Sheets over 12 in. wide and weighing 12 ℔, $1; more than 16 ℔, $2 ℘ ℔.
Advance 2¢ for each additional inch in width above 12 in., and 2¢ ℘ ℔ on each No. thinner than Nos. 26 to 36, inclusive.
All German Silver thinner than No. 36 is Platers', at 50¢ ℘ ℔ additional.
German Silver Scrap, one-half less than net price of 12 in. Market Metal. German Silver Turnings, Filings and Chips, half the price of Scrap.

LEAD.—Duty: Pig, $2 ℘ 100 ℔. Old Lead, 2¢ ℘ ℔; Pipe and Sheet, 3¢ ℘ ℔.

American ... 4⅝ @ 4¾¢
Bar ... 6¢
Pipe ... 6¾¢, dis 10 ℅
Tin Lined Pipe ... 15¢, dis 10 ℅
Sheet ... 7½¢, dis 10 ℅
Shot ... Drop, 7¢; Buck, 8¢
Chilled Shot ... 8¢

NICKEL.

Metallic, in grains ... ℘ ℔ $1.00
Metallic, in grains, ℘ 100 ℔ lots ... 1.05
Metallic Anodes ... $1.35 @ 1.40

Nickel-Plating Materials.

Composition, Cutting	℘ ℔	$0.07
Composition, Cutting in bbls	"	.05
Composition, Emery Cake	"	.07
Composition, White Tripoli	"	.10
Sulphate and Ammonia	"	.40
Nickel, Chloride	"	1.00
Nickel, Chloride and Ammonia	"	.65
Acid, Muriatic, 20°	"	.04
Acid, Nitric, 38°	"	.10
Acid, Sulphuric, 66°	"	.04
Rouge, hard and soft, for Nickel	"	.20
Ammonia Water, 26° U. S. P	"	.14
Potassa Caustic, pure white	"	.60

ANTIMONY.

Hallett's ... ℘ ℔ 9½¢
Cookson ... " 10¼¢

SPELTER—Duty: Pigs, Bars and Plates, $1.50 ℘ 100 lbs.
American, cash ... 4¾ @ 5¼¢

ZINC—Duty: Pig or Block, $1.50 ℘ 100 lbs. Sheet, 2½¢ ℘ ℔.
600 ℔ casks ... ℘ 100 ℔ $6.00 @ 6.25

Zinc Tubing—Dis. 25 ℅.

Plain ... .27
Fancy ... .33
Scotch and Extra Patterns ... .36

BABBITT METAL.

N. P. U ... ℘ ℔ 8¢
A, 28¢; B, 22¢; C, 14¢.

WIRE.

Iron Wire.—Put up in 63 ℔ bundles.

Nos. 00 to 9,	10, 11,	12,	13, 14,	15, 16,	17,	18,
10	11	11½	12½	14	15	16

Bright Market Wire ... dis 57½ @ 60 ℅
" Charcoal ... dis 45 @ 47½ ℅
" Bale Wire, Nos. 7 to 12 ... dis 55 @ 57½ ℅
Annealed Market Wire; " Fence Wire, Nos. 8 and 9; " Grape Wire, Nos. 10 to 14 ... dis 57½ @ 60 ℅
" Bessemer Steel Wire ... dis 52½ @ 55 ℅
Coppered Market Wire ... dis 52½ @ 55 ℅
" Bale Wire, Nos. 7 to 12 .. dis 50 @ 52½ ℅
Galvanized Market Wire; " Fence Wire ... dis 45 @ 47½ ℅

Stone or Weaving Wire.

Nos.	16	17	18	19	20	21	22	23	24	25	26
Cents	14	15	16	19	20	21	22	23	24	25	26
Nos.	27	28	29	30	31	32	33	34	35	36	..
Cents	28	29	30	32	33	35	37	40	45	55	..

Nos. 16 to 18 ... dis. 57½ @ 60 ℅
19 to 26 ... " 60 @ 62½ ℅
27 to 36 ... " 62½ @ 65 ℅
Galvanized Stone Wire ... " 45 @ 47½ ℅

Steel Wire.

Cast Steel. Steel Wire list ... dis. 50 ℅

Brass and Copper Wire.

Dis. 30 @ 35 ℅.	High Brass.	Low Brass.	Gild'g and Cop'd.
No. 0 to 20	$0.33	$0.37	$0.46
No. 21	.36	.40	.46
No. 22	.37	.41	.47
No. 23	.38	.42	.48
No. 24	.40	.44	.50
No. 25	.43	.47	.53
No. 26	.45	.49	.55
No. 27	.48	.52	.58
No. 28	.52	.56	.63
No. 29	.55	.59	.66
No. 30	.58	.62	.72
No. 31	.62	.66	.78
No. 32	.66	.70	.84
No. 33	.70	.74	.93
No. 34	.74	.78	1.06

Spring Wire, 2¢ ℘ ℔ advance.
Flat, Square and Half-Round Wire, 5¢ ℘ ℔ advance on Round Wire.
Fancy Wire, not less than 10¢ ℘ ℔ advanced on Round Wire.
Brass Rods, No. 8 and larger, not less than 2 ft. lengths, 28¢.
Wire straightened and cut, smaller than No. 8 and not less than 2 ft. lengths, 43¢.
Wire and Rods less than 2 ft. lengths, special rates.
Twelve cents ℘ ℔ extra for spooling on 1℔ spools to No. 36.

MISCELLANEOUS TINNERS' STOCK.

Solder.

½ & ½ ... 15¢
Extra ... 13½¢
No. 1 ... 12 ¢

Rivets.

Iron and Tinned, new list, Dec. 10, 1881 ... dis. 40 ℅
In bulk, new list, Dec. 10, 1881 ... dis. 40 ℅
Copper Rivets and Burrs ... dis. 50 ℅

Nos.	7	8	9	10	11	12	13	14	15
℘ ℔	49¢	50¢	52¢	54¢	56¢	58¢	60¢	65¢	70¢

Stove Bolts.

American Screw Co.'s ... dis. 50 ℅
R. B. & W ... dis. 45 ℅
R. & E. Mfg. Co ... dis. 50 ℅

GLASS.

Prices current per box of 50 feet.
List, July 2, 1883.

Single.

SIZES.	1st.	2d.	3d.	4th.
6 x 8 to 10 x 15	$13.50	$11.50	$10.75	$10.25
11 x 14 to 16 x 24	14.50	13.50	12.50	11.50
18 x 22 to 20 x 30	18.50	17.00	15.50	14.00
15 x 36 to 24 x 30	20.50	18.50	16.25	
26 x 28 to 24 x 36	22.00	20.00	17.50	
26 x 36 to 26 x 44	24.00	22.00	18.50	
26 x 46 to 30 x 50	26.00	24.00	20.50	
30 x 52 to 30 x 54	27.00	25.00	21.50	
30 x 56 to 34 x 56	29.00	27.00	24.00	
34 x 58 to 34 x 60	31.00	29.00	26.00	
36 x 60 to 40 x 60	35.00	31.00	29.00	

Double.

SIZES.	1st.	2d.	3d.	4th.
6 x 8 to 10 x 15	$17.50	$15.00	$14.00	$13.00
11 x 14 to 16 x 24	20.00	18.00	16.50	
18 x 22 to 20 x 30	24.00	22.00	20.00	
15 x 36 to 24 x 30	26.50	24.00	21.00	
26 x 28 to 24 x 36	29.00	26.00	23.00	
26 x 36 to 26 x 44	30.00	28.00	24.00	
26 x 46 to 30 x 50	33.00	31.00	27.00	
30 x 52 to 30 x 54	35.00	32.00	28.00	
30 x 56 to 34 x 56	37.00	34.00	30.00	
34 x 58 to 34 x 60	40.00	37.00	33.00	
36 x 60 to 40 x 60	43.00	40.00	37.00	

Sizes above—$15 per box extra for every 5 inches.
An additional 10 per cent. will be charged for all Glass more than 40 inches wide. All sizes above 52 inches in length, and not making more than 81 united inches, will be charged in the united 84 inches bracket.
Discount. 70.

Paper Stock, &c.

(Dealers' Selling Prices.)

	Cents ℘ ℔.	
White Shirt Cuttings No. 1	7 @	7⅛
White Shirt Cuttings, No. 2	5⅛ @	6
Mill Assorted Whites	5¼ @	5½
Unbleached Muslins	6⅛ @	6⅜
City Whites, No. 1	4⅛ @	4¾
New Canton Flannels	@	6⅛
New Seconds, light	3¼ @	3½
New Seconds dark	2¾ @	3
No. 2 Whites	2⅛ @	2⅜
Cotton Canvas	4½ @	4¾
Linen Canvas, No. 1	4¼ @	4½
Seconds, City No. 1	1⅛ @	1⅜
Seconds, City No. 2	1 @	1¼
Colors, per cwt.	70 @	90
Manila Rope	3⅛ @	3⅜
Manila Rope, Tarred	2⅛ @	2⅜
Gunny Bagging, No. 1	1¾ @	2
Gunny Bagging, No. 2	1½ @	1⅝
Kentucky Bagging	4	
Burlap Bagging, No. 1	2¼ @	2½
Tar Shakings	1¾ @	2
Hemp Twine Stock	4¼ @	4½
Hard White Shavings, No. 1	4 @	
Soft White Shavings, No. 1	3¼ @	3½
White Shavings, No. 2, soft		3
Mixed shavings, part white	2½ @	3
Ledger and Writing	3 @	3¼
Solid Stock	2⅜ @	2½
Book Stock, No. 1, light	1 @	1¼
Old Newspapers	1⅛ @	1⅜
Pure Manilas	1¾ @	2
Bogus Manilas and Hardwares	¾ @	1
Commons per 100 lbs	60 @	70
Binders' Board Cuttings	⅞ @	1
Straw Board Cuttings per cwt	70 @	75

Paints, Oils, &c.

Paints.

Black Lamp, Coach Painters ... ℘ ℔ 22 @ 24c
Black Lamp, Ordinary ... ℘ ℔ 6c
Black Ivory Drop, fair ... 12 @ 15c
Black Ivory Drop, best ... 23c
Black Paint, in oil ... kegs 8c; asst'd cans, 11c
Blue Prussian, fair to best ... 40 @ 55c
Blue Prussian, fair to best, in oil ... 45 @ 55c
Blue Chinese dry ... 70c
Blue Ultramarine ... 18 @ 30c
Brown, Spanish ... 1¼c
Brown, Van Dyke ... 10 @ 12c
Green, Chrome ... 15 @ 23c
Green, Chrome, in oil ... 14 @ 18 @ 25c
Green, Paris ... good, 20c; best, 25c
Green, Paris, in oil ... good, 30c; best, 45c
Iron Paint, Bright Red ... ℘ ℔ 2¼c
Iron Paint, Brown ... ℘ ℔ 1½c
Iron Paint, Purple ... ℘ ℔ 3 c
Iron Paint, Ground in oil, Bright Red ... ℘ ℔ 6½c
Iron Paint, Ground in oil, Red ... ℘ ℔ 5½c
Iron Paint, Ground in oil, Brown ... ℘ ℔ 5½c
Iron Paint, Ground in oil, Purple ... ℘ ℔ 6 c
Mineral Paints ... 2 @ 4c
Orange Mineral ... 10c
Red Lead, American ... 7c
Red Venetian (Eng.) dry ... $1.65 @ $1.70
Red Venetian, in oil ... asst'd cans, 11c; kegs, 8c
Red Indian dry ... 9 @ 12c
Rose Pink ... 10 @ 13c
Sienna, American, Raw, powdered ... 4c
Sienna, Burnt, powdered ... 4½c
Sienna, Burnt, in oil ... 10 @ 16 @ 20c
Sienna, Raw ... 11 @ 15 @ 25c
Umber, Burnt, powdered ... 4 @ 8c
Umber, Burnt, in oil ... 9 @ 12 @ 16c
Umber Raw, powdered ... 3⅛ @ 7½c
Umber, Raw, in oil ... 10 @ 16 @ 48c
Vermilion, Chinese ... 90c
Vermilion, English ... 46 @ 48c
Vermilion American, Common ... 15c
White Lead, American, pure dry ... 6⅛ @ 6¾c
White Lead, American, pure in oil ... 6⅛ @ 7c
White, Paris, English, prime ... in bbls. 2 @ 2½c
Yellow Ochre, French ... $1.75
Yellow Ochre, French, in oil .. asst'd cans, 11c; kegs, 8c
Yellow Ochre, Vermont ... in casks, 1½c
Yellow Chrome ... 17 @ 27c
Yellow Chrome, in oil ... 14 @ 18 @ 25c
Zinc White, American No. 1, dry ... 5 @ 6c
Zinc White, American No. 1, in oil ... 9c
Zinc White, French (Paris) dry ... 8 @ 10c
Zinc White, French, in oil ... 10 @ 11c

Oils.

Linseed Raw, in casks and bbls ... 58 @ 59c
Linseed Boiled, in casks and bbls ... 61 @ 62c
Linseed, Calcutta ... 61 @ 62c
Bleached Whale ... ℘ gal. 63c
Bleached Sperm ... ℘ gal. $1.20
Bleached Elephant ... 70c
Signal ... 75c
Prime Lard ... 67c
No. 1 Extra ... 62c
West Virginia ... 12c @ 18c
Drilling ... 40c
Miners' Oil ... 42c @ 45c
Fish Oil, pressed ... 44c @ 47c
Neatsfoot ... 70c @ 80c
Tallow ... 70c @ 75c
Empire Cylinder Oil ... 65c
Machinery ... 40c
Engine ... 50c

Sundries.

Asphaltum Cuban ... 6½c @ 9½c
Asphaltum Egyptian ... 9c @ 10c
Benzine ... ℘ gal. 8c @ 10c
Chalk ... [illegible]
[illegible]
Dryers Patent Am'n ... asst' cans, 9c; keg 7c
Frostings ... [illegible]
Glue, White ... 24 @ 35c
Glue, Sheet ... 20c
Glaziers' Points, Zinc ... 8c
Gum, Copal ... 36c
Gum, Damar ... 25c
Gum Shellac, English ... 40c
Gum Shellac, English, dark ... 35c
Litharge ... 7½c
Mineral Wool, ordinary ... ℘ ℔ 1 @ 1¼c
Mineral Wool, extra ... ℘ ℔ 3 @ 3½c
Pumice Stone, selected Lumps ... 4 @ 6c
Pumice Stone, Powdered ... 2¾c
Pine Tar, bbls ... $3.25
Pitch ... $1.90
Putty, in bladders ... 3c
Putty, in bulk ... 2½c
Rosin—Common and Good—Strained ... $1.90
E & F ... $2.10 @ $2.20
G & H ... $2.30 @ $2.50
I & K ... $2.60 @ $2.80
M & N ... $3.00 @ $3.25
Spirits Turpentine ... 43c
Whiting Spanish ... ¾c
Waste, No. 1 Cop ... 9½c
Waste, No. 1 White Machine ... 9½c
Waste, No. 2 White Machine ... 9c
Waste, No. 1 Colored ... 7c
Waste, No. 2 Colored ... 6½c
Waste Washed Machine ... 9c

The Manufacture of Spiegeleisen in Colorado.

The Colorado Coal and Iron Company have just succeeded, at their works in South Pueblo, Col., in producing spiegeleisen from manganiferous iron ores found in the Arkansas Valley, in that State. This spiegeleisen was made in the ordinary 65-foot blast furnace. It is now being regularly used in the manufacture of Bessemer steel at the company's rail mill at South Pueblo, and is found to answer instead of the imported article, which, up to this time, has been their dependence. This new departure enables the company to produce from the district immediately around the works, and owned by them, all the elements which go into the manufacture of the best quality of Bessemer steel. The remarkable absence of phosphorus in that district makes the basic process entirely unnecessary there. The works are now engaged upon a large contract for steel rails for the Chicago, Burlington and Quincy Railroad.

The company have increased their product of nails, and in September turned out 5721 kegs. These nails are of such excellent quality, being made of the pure ores of the company, that they are supplanting nails made from old rails which are in vogue in parts of the West.

The company have within the year started 50 coke ovens at Crested Buttes, some 200 miles west of Pueblo, on the road to Utah, from which it is supplying the trade in coke for the silver centers of both Utah and Leadville. Additional ovens are in contemplation. This coke is singularly pure, its analysis being as follows:

	No. 1.	No. 2.
Water and volatile matter	1.55	0.41
Fixed carbon	92.03	92.44
Ash	6.62	7.15
Sulphur	.58	.55

The value of this can be inferred from the statement that a sample of picked Connellsville coke, obtained at the Germania Works, Utah, analyzed 8.07 per cent. of ash. In the first week in October the company made 2580 tons of coke. In the same week they mined 12,302 tons of coal. The iron and steel works at South Pueblo produce pig iron, steel rails, nails and spikes. In addition to the iron and steel product at South Pueblo, the rolling mill of the company at Denver is turning out bar iron and railroad splices.

The manufacture of Bessemer steel in Colorado was intelligently conceived, scientifically approved and correctly established. It seemed to be an audacious undertaking of over-enthusiastic, if not unwise, capitalists. When the project was first announced, Colorado was so very far away from centers of manufacture and of population, and apparently from the concentration of railroad interests essential to the support of a Bessemer steel works, that experienced—and therefore conservative—iron and steel manufacturers were not disposed to predict a successful future for the new undertaking. But so carefully had the abundant minerals in the vicinity of the proposed works been analyzed and tested, and so thoroughly had the probable demand of the adjacent territory for iron and steel been canvassed, that the mechanical and commercial success of the works was assured from the beginning. The coal was abundant and of good quality, suitable for use both raw and coked; the iron ore was found in vast deposits, proving to be both rich in iron and deficient in hurtful ingredients; and limestone was conveniently near for fluxing purposes. A blast furnace was erected first, and blown in with local coke and ores on September 7, 1881, and has been in blast almost continuously ever since, producing Bessemer pig iron of excellent quality. Next, the Bessemer steel works and steel-rail mill were erected, and on April 11, 1882, the first steel rail ingot was cast. Puddling furnaces, a plate train, and a nail factory were then added. The works, as thus constituted, formed a tolerably complete establishment, though to balance its parts more blast furnaces are needed, which the company are now erecting, having a second stack almost completed

The State of Colorado may now be said to be independent of any other locality in the manufacture of any kind of iron or steel, as it demonstrably possesses all the essentials. In this respect it surpasses the Eastern sections of the United States, which have not thus far been able to completely emancipate themselves from dependence on foreign countries. The East may make its own Bessemer pig iron, but a very considerable admixture of foreign ores is used, and it makes a small part of its spiegeleisen, possibly 20,000 tons a year, but for that purpose foreign ores are used almost exclusively. The only native spiegeleisen made in this section is the small quantity made from zinc residuum. Over 100,000 tons of spiegeleisen are imported annually. The "Pennsylvania of the West" surpasses Pennsylvania herself in supplying all the requisites needed.

Proposed Steel Rail Manufacture in New South Wales.—With a view to encourage Colonial industry, the Minister for Works for New South Wales has issued the following minute: "Representations having been frequently made that were the Government to offer anything like reasonable chances to Colonial capitalists and manufacturers, the permanent-way materials required for our lines would soon be made in this Colony at much less cost than they could be imported for, I consider it is very desirable, in the interests of the community, that the extensive iron mines known to exist in this Colony should be developed, and every possible inducement offered to capitalists and manufacturers to establish local industries for the manufacture of steel and iron rails, of which the Government is such a large purchaser. In order to give this opportunity so frequently asked for, and to which so much importance is attached, I wished tenders called for, say, 150,000 tons of steel rails to be made in the Colony, the tenders to be called for under two conditions: 1. For rails to be manufactured from native ores. 2. For rails to be made from imported materials. So that ample time may be given to those who contemplate tendering to make the arrangements necessary for the extensive works that may be invited at once, six months' time to be given for the receipt of the same, the contract to commence from January 1, 1886, or earlier, at the option of the successful tenderer, I wish the time of delivery to extend over a period of 10 years—that is, the contractor to deliver not less than 15,000 tons per annum."

Steel for the New Cruisers.—When the Advisory Board fixed the tests for the steel to be used in the construction of the new cruisers it was generally held that they were too high, and that steel meeting the requirements could only be furnished at a very high cost. Some changes were subsequently made, the tensile strength being left at 60,000 pounds per square inch, but the elongation being reduced from 25 to 23 per cent., and the bending test also being modified. So far as the Phœnixville Works are concerned, the modifications seem to have been needless, the following averages having been obtained with specimens tested:

Lot.	Tensile strength.	Final elongation.
20	64,185 pounds.	26.18 per cent.
30	64,308 "	25.4 "
10	63,807 "	25.35 "

The Marquette *Mining Journal* of October 6 states that up to this date last year the six leading mines of the Upper Peninsula had shipped by lake 1,069,936 gross tons of iron ore, viz.: the Lake Superior, Chapin, Republic, Cleveland, Champion and Florence. This year the same mines have forwarded only 779,686 tons, as follows:

	Gross tons.
Chapin	223,899
Lake Superior	162,774
Cleveland	148,155
Champion	94,299
Republic	113,411
Florence	37,148
Total	779,686

The following table exhibits, in gross tons, the total lake shipments of iron ore from Upper Peninsula ports the present season, up to and including October 3, together with the amount shipped from the same ports during the corresponding period of last year:

Name of port.	1882.	1883.
Escanaba	1,432,252	1,129,866
Marquette	790,850	516,946
L'Anse	52,708	53,005
St. Ignace	43,296	36,286
Total	2,319,106	1,766,103

Showing a decrease of 553,003 gross tons.

The *Ironmonger* says that Bolckow, Vaughan & Co. have at their steel works, Eston, six 15-ton and four 10-ton converters in operation, and are producing about 5000 tons of rails per week. If any American Bessemer steel company, adds the *Bulletin*, had this number of converters it could easily produce, if the country could take, twice as many rails per week as this great English company is credited with producing. As a matter of fact, we can name ten American converters, owned by different companies, which even in our present dull times are producing the steel that goes into more than 10,000 tons of rails per week.

The National Association of Window-Glass Workers, at Pittsburgh, now on strike against a reduction of wages, have formed a combination, with "$1,000,000 capital," to enter into opposition to their late employers in the manufacture of glass. Fourteen window-glass blowers left for Belgium last week to work there. They assert that they can make as much money there as at home. We wonder that they did not stay here and take stock in the co-operative glass works.

Wholesale Hardware Prices, October 17, 1883.

(For Wholesale Metal Prices See Page 33.)

HARDWARE.

Anvils.
Eagle Anvils American....... ...₩ ℔ 10c—dis 20 %
Wright's.............................11c @ 11¼c
Armitage's Mouse Hole.....................9½c @ 9¾c
Armitage's Mouse Hole (extra quality)............11½
Trenton 10½c
Wilkinson's......................................10½c

Anvil Vise and Drill.
Millers Falls Co., $18.00............................dis 20 %
Cheney Anvil and Vise...............................dis 33⅓ %

Augers and Bits.
Conn. Valley Mfg. Co. | dis 55@60 % from list of Jan. 7, 1880.
C. E. Jennings & Co.
Humphreysville Mfg. Co.
Ives
Beecher (French, Swift & Co.
Griswold
Nobles Mfg. Co
Snell Mfg.
Douglass Mfg. Co. Extra..............................dis 55 %
Cook's Douglass Mfg. Co...........................dis 40&10 %
Patent Solid Head...................................dis 30 %
Lewis' Patent Single Twist..........................dis 45 %
Russell Jennings' Auger, Dowel, Machine-Dowel and Hand Rail bits.....................dis 10&10&10 %
Russell Jennings' Augers...........dis 16⅔&10&10&10 %
Russell Jennings' Car and Machine Bits, Boring-Machine and Millwrights' Augers......dis 25&10&10&10 %
Imitation Jennings' Bits............................dis 50 %
Ives' "Jennings'" Bits ....dis 40&10 %
Snell Mfg. Co.'s Jennings' Bits.....................dis 40 %
Expansive Bits, Clark's, small, $18; large, $26..dis 25 %
Expansive Bits, Ives'............ $20 @ $30—dis 33⅓&10 %
Expansive Bits, Blake's.......................$20—dis 40 %
Expansive Bits, Derby, $17 and $26...........dis 40&10 %
Hollow Augers, Ives' | dis 25 %
Hollow Augers, French, Swift & Co.
Hollow Augers, Douglass'...............................25 %
Hollow Augers, Bonney's Adjust. ₩ dz. $48—dis 25&10 %
Hollow Augers, Stearns' Adjust. ₩ dz. $48—dis 20&10 %
Hollow Augers, Ives' Expansive, each $4.50—dis 30&10 %
Hollow Augers, Universal Expan., each $4.50—dis 20 %
Wood's..dis 25 %
Gimlet Bits....................$7.50 ₩ gross, dis 50 %
Gimlet Bits, Diamond..........₩ doz. $1.10, dis 25&10 %
Gimlet Bits "Bee"....................................dis 25 %
Double Cut Gimlet Bits, Shepardson's...............dis 45 %
Double Cut Gimlet Bits, Ct. Valley Mfg. Co. dis 30&10 %
Double Cut Gimlet Bits, Hartwell's..................dis 60 %
Double Cut Gimlet Bits, Douglass'...................dis 40 %
Double Cut Gimlet Bits, Ives'.......................dis 50 %
Morse's Bit Stock Drill.........................dis 25&10 %
Holtz Bit Stock Drills..........................dis 25&10 %
L'Hommedieu's Ship Augers...........................dis 15 %

Awl Hafts.
Sewing, Brass Ferrule ....$3.50 ₩ gross—dis 40&10 %
Patent Sewing, Short...........$1 00 ₩ doz.—dis 40&10 %
Patent Sewing, Long...........................$1.20 ₩ doz.—net
Patent Peg, Plain Top.......$10.00 ₩ gross—dis 40&10 %
Patent Peg, Leather Top ...$12.00 ₩ gross—dis 40&10 %

Awls, Brad Sets, &c.
Awls, Sewing, Common ....₩ gross $1.70—dis 25&10 %
Awls, Shouldered Peg.........₩ gross $2.45—dis 25&10 %
Awls, Patent Peg...................₩ gross 63c—dis 25&10 %
Awls, Shouldered Brad.........₩ gross $2 70—dis 25&10 %
Awls, Handled Brad..........$7.50 ₩ gross—dis 25&10 %
Awls, Handled Scratch.........$7.50 ₩ gross—dis 25&10 %
Awls, Socket Scratch..........$1.50 ₩ gross—dis 10&10 %
Brad Sets, Aiken's................₩ doz $10.00—dis 50&10 %
Millers Falls Adj. Tool Hdles,...₩ doz $12—dis 25 %
Brad Sets, No. 42, $10.50; No. 43, $12.50......dis 70&10&5 %
Brad Sets, Stanley's Excelsior, No. 1, $9.60...dis 30&10 %
Brad Sets, Stanley's Excelsior, No. 2, $4.80...dis 30&10 %
Brad Sets, Stanley's Excelsior, No. 3, $7.80...dis 30&10 %

Axes.
Single Bit, 4½ to 5½ and under...........₩ doz 8.00 net
Single Bit, 4½ to 6 and over.............₩ doz $8.50 net
Single Bit, beveled...................50c ₩ doz advance
Double Bit, 4½ to 5½ and under..........₩ doz $15.00 net
Double Bit, 4½ to 6 and over...........₩ doz $16.00 net
Double Bit, beveled.................$1.00 ₩ doz advance

Axle Grease.
Frazer's...₩ ℔ 6c

Axles.
Standard list...dis 45 %

Balances.
Spring Balances.......................................dis 33⅓ %

Bells.
Hand, Light Brass...................................dis 70&10 %
Hand, Extra Heavy......................................dis 45 %
Hand, White Metal......................................dis 60 %
Hand, Silver Chime..................................dis 20&10 %
Hand, Globe (Cone's Patent).....................dis 25&10 %
Gong, Abbe's..dis 20&10 %
Gong, Yankee..dis 30&10 %
Gong, Barton's..dis 30&10 %
Crank, Taylor's.......................................dis 25&10 %
Crank, Brooks'....................................dis 50&10&2 %
Crank, Cone's..dis 10 %
Crank, Connel's.......................................dis 15&10 %
Lever, Sargent's......................................dis 55&10 %
Lever, Taylor's Bronzed or Plated........................net
Lever, Taylor's Japanned............................dis 25&10 %
Lever, R. & E. M. Co.'s...........................dis 50&10&2 %
Lever, Reading...................................dis 25&10&10 %
Pull, Brook's.....................................dis 50&10&2 %
Pull, Western...dis 25&10 %
Call...dis 25 %
Cow, Common Wrought..............................dis 55&10 %
Cow, Western..dis 20&10 %
Cow, Western, Sargent's new list...............dis 60&10&10 %
Cow, Kentucky "Star"...............................dis 20&10 %
Cow, Kentucky Sargent's new list..............dis 60&10&10 %
Cow, Dodge' Genuine Kentucky, newlist—

Nos.	0	1	1½		4	5	6	Hog	
	$12.00	10.0	9.0	8.00	-.00	5.00	3.50	2.50	5.00 dis 60 %

Cow, Texas Star ....dis 40&10 %

Bellows.
Blacksmiths Common.....................................dis 45 %
Blacksmiths' Extra Pittsburgh Pattern...............dis 20 %
Molders'...dis 25 %
Hand Bellows...dis 20 %

Belting, Rubber.
Belting and Packing Co..................................dis 50 %

Bit Holders.
Extension, Barber's.................₩ doz $15.00—dis 40&5 %
Extension, Ives'.........................₩ doz $15.00—dis 40 %
Diagonal...................................₩ doz $24.00—dis 40 %
Angular...................................₩ doz $24.00—dis 40&5 %

Blind Adjusters.—Domestic..₩ doz $3.00—dis 30 %
Excelsior.........................₩ doz $16.00—dis 50&10&2 %

Blind Fasteners.
Mackrell's.................. ₩ doz pairs, $1.00 dis 20&10 %
Van Sand's Screw Pattern.............$9 ₩ gro. dis 10&2 %
Van Sand's Old Pattern.................$9 ₩ gro. dis 10&2 %
Washburn's Old Pattern............................$9 ₩ gro. net
Merriman's..new list, net
Salisbury & Austin, No. 2008.................$9 per gro. net
Security Gravity..................................$9 per gross, net

Blind Staples.
Bar bed, ⅜ in. and larger ....₩ ℔ 9¾c net
Bar bed ⅜ in...₩ ℔ 11½c net

Blocks.
Penfield Block Co., I. R. and I. Strap'd... | New List. | dis 40 %
Penfield Block Co., W. I. C. bushed.... | | dis 40 %
Penfield Block Co., W. I. all steel roll'r.. | | dis 20 %
Penfield Block Co., L. & I Sheaves....... | | dis 40 %
Bagnall & Loud ....dis 35 %
Stanley Rule & Level Co.'s..........................dis 40&10 %

Bolts.
Cast Iron Barrel Square, &c......................dis 55&10 %
Cast Iron Shutter Bolts..............................dis 60&10 %
Cast Iron Chain (Sargent's list)....................dis 65&10 %
Ives' Patent Door Bolts.............................dis 55&10 %
Wrought Barrel..dis 55&10 %
Wrought Square.......................................dis 55&10 %
Wrought Shutter, all Iron, Stanley's list....dis 50&10 %
Wrought Shutter, Brass Knob, Stanley's list.dis 50&10 %
Wrought Shutter, Sargent's list....................dis 55&10 %
Wrought Sunk Flush, Sargent's....................dis 75&10 %
Wrought Sunk Flush, Stanley's....................dis 40&10 %
Wrought B. K. Flush, Com'n Stanley's......dis 55&2½ %
Carriage and Tire Common..........dis 80&15 @ 80&20 %
Carriage and Tire, Philadelphia, new list...dis 70&10 %
Carriage and Tire, Philadelphia Pattern.....dis 70&5 %
R. B. & W. Carriage (old list)...........................dis 70 %
Tire, Am. Screw Co.'s, Phila., new list, July 2 1883..dis 80 %
Tire, "Bay State," new list, July 2, 1883..............dis 65 %
Tire, R. B. & W., new list..............................dis 75&10 %
Stove—American Screw Co.'s...........................dis 50 %
Stove, R. B. & W...dis 45 %
Stove, R. & E. Mfg. Co..................................dis 50 %
Plow...dis 50 %
Plow, R. B. & Co...dis 45 %
Machine...dis 70&10 %
Bolt Ends...dis 70&10 %

Borax...14c ₩ ℔ net

Boring Machines. Upright Angular
First quality, no Augers...... $5.50 $6.75......dis 50 %
Phillips, with Augers........ 7.00 7.50...........net
Jennings & Co., no Augers...... 5.50 6.75......dis 45 %
Saunders' Patent, Regular Bed, $6.00..............dis 20 %
Saunders' Patent, Extra Bed, $6.50.................dis 20 %

Bow Pins.
Humason, Beckley & Co.'s, Nos. 1 and 2..........dis 60 %
Humason, Beckley & Co.'s other Nos.............dis 70 %
Sargent & Co.'s............$19.70 and $21.40, dis 66⅔&10 %
Hotchkiss...dis 25 %
Peck, Stow & W. Co...................................dis 30&10 %

Braces.
G. S. Backus..dis 50&5 %
Barber's..dis 40&5 %
Spofford's Patent....................................dis 50&5 %
Ives' Patent Braces.......................dis 55@55&5 %
Common Ball (American)..............................dis 55 %
Amidon's..dis 50 %
Barker's Imp'd..dis 55 %
Empire ....dis 30 %
Buffalo Ball...dis 40 %

Brackets.
Shelf, plain...dis 50&10 %
Shelf, fancy...dis 60&10 %
Reading, Plain..................................dis 55&5&10 %
Reading, Rosette...............................dis 60&5&10 %

Bright Wire Goods.
List of June 25, '83...........................dis 70&10&— %

Bull Rings.
Union Nut Co...dis 55 %
Sargent's...dis 66⅔&10 %
Hotchkiss' low list.......................................dis 15 %
Humason, Beckley & Co.'s..............................dis 70 %
Peck, Stow & W, Co.'s.........................dis 33⅓ & 10 %

Butts.
Wrought Brass.......................................dis 70@75 %
Cast Brass Tiebout's...................................dis 33⅓ %
Cast Brass, Corbin's Fast Joint.....................dis 20&10 %
Cast Brass Loose Joint...............................dis 10&10 %
Fast Joint, Narrow...............................dis 40&10&10 %
Fast Joint, Broad................................dis 40&10&10 %
Loose Joint..dis 60&10 %
Loose Joint, Japanned................................dis 60&10 %
Loose Joint, Japanned with Acorns..................dis 60&10 %
Parliament Butts......................................dis 60&10 %
Mayer's Hinges...dis 60&10 %
Loose Pin, Acorns.....................................dis 60&10 %
Loose Pin, Acorns, Japanned.........................dis 60&10 %
Loose Pin, Acorns, Japanned, Plated Tips...dis 60&10 %

WROUGHT IRON.

Fast Joint, Narrow...................................dis 50&10 %
Fast Joint, Lt. Narrow................................dis 50&10 %
Fast Joint, Broad.....................................dis 50&10 %
Loose Joint, Broad....................................dis 55&10 %
Table Butts, Back Flaps, &c.........................dis 50&10 %
Inside Blind Regular..................................dis 50&10 %
Inside Blind, Light.....................................dis 50&10 %
Loose Pin, Wrt...dis 55&10 %
Loose Pin, Light.......................................dis 50&10 %
Spring Hinges:
Geer's Spring and Blank Butts........................dis 30 %
Sabin Mfg. Co.'s Double Acting......................dis 35 %
Union Spiral Spring, Japanned......................dis 25 %
Union Spring Hinge Co.'s..............................dis 25 %
American Spring Hinge Co.'s.........................dis 30 %
Gem Spring Hinges.....................................dis 30 %
Barker's Double Acting................................dis 20 %
Union Mfg. Co..dis 25 %
Bommer's ....dis 25 %
Buckman's..dis 25 %
Empire...dis 50&10 %
Acme...dis 65&10 %
Climax...dis 50&10 %
Blind Butts Parker...................................dis 70&2 %
Blind Butts, Palmer..................................dis 50&10 %
Blind Butts, Seymour..................................dis 70&2 %
Blind Butts, Lull & Porter...........................dis 75&10 %
Blind Butts, Nicholson...............................dis 45&10 %
Blind Butts, Huffer.......................................dis 50 %
Blind Butts, Clark's, Nos. 1, 3, 5.....................dis 70&2 %
Blind Butts, Manhattan Hardware Co..............dis 70 %
Blind Butts, Sargent's, Nos. 1, 3..............dis 66⅔&10 %
Blind Butts, Sargent's, No. 12.....................dis 70&10 %
Blind Butts, Reading's Gravity...............dis 66⅔&10 %
Blind Butts, Shepard's "Noiseless," Nos. 50, 60, 65, 45 and 55 ....dis 70 %
Blind Butts, Shepard's "Gravity," Nos. 1, 3 and 5..dis 70&10 %
Shepard's Lull & Porter Shutter Hinges....dis 70&10 %
Shepard's Reversible Shutter Hinges.......dis 70&10 %
Clark's Improved Shutter Hinge, Nos. 0, 1, 1½, 2, 2½, 3..dis 60&10 %

Butcher's Cleavers.
Humason & Beckley Mfg. Co...........................dis 25 %
Bradley's...dis 25 %
Beatty's...dis 33⅓ %

1	2	3	4	5	6	7	8
$16.50	19.00	21.50	24.00	27.00	30.00	33.50	36.50

Calipers.................................see Compasses

Can Openers.—Messenger's Comet, ₩ doz, $3.00 ....dis 25 %
American..........................₩ gross $6.00, dis 25@30 %
Duplex.................................₩ doz 25c, dis 15@20 %
Lyman's...............................₩ doz $3.75, dis 20 %
No. 4, French.........................₩ doz $2.25, dis 55 %
No. 5, Iron Handle...............₩ gross $0 00, dis 25@30 %
Eureka.................................₩ doz $2.50, dis 10 %
Sardine Scissors......................₩ doz $7.00, dis 55 %
Star.......................................₩ doz $5.00, dis 25&5 %
Sprague, No. 1, $2.00; No. 2, $2.25; No. 3, $2.50...dis 50&10 %
"Worlds Best" ₩ gross, No. 1, $12.00; No. 2, $24.00; No. 3, $30.00..dis 50 & 10 %
Universal...............................₩ doz $3.00, dis 35 %
Domestic...............................₩ doz $2.50, dis 45 %
Champion...............................₩ doz $2.00, dis 50 %

Caps—Percussion, ₩ 1000.
Hicks & Goldmark's
F. L. Waterproof, 1-10's..............................50c | dis 10&10 %
E. B. Trimmed Edge, 1-10's...........................65c
E. B. Ground Edge, Central Fire, 1-10's............70c
Double Waterproof, 1-10's...........................$1.40
Pistol Waterproof, 1-10's.............................75c
Musket Waterproof, 1-10's...........................80c
G. D. & S. B...33c, dis 10 %
U. M. C., F. C. trimmed..............................50c | dis 15&10 %
U. M. C., F. L. ground.................................70c
U. M. C., Cen. fire ground............................70c | dis 10&5 %
U. M. C., Double W. Proof..........................$1.40
Double Waterproof, in 1 10's......................$1.40 | dis 10 %
Colt's Pistol, in 1-10's.................................75c
F. L...50c | dis 10&5 %
E. B. 1-10, trimmed....................................65c
E. B. 1-10, ground edge...............................70c
Musket, in 1-10's.................................80c, dis 33⅓ %

Cartridges.—Rim...................................dis 65&5 %
Central Fire...dis 45 %

Cards.—Horse and Curry.............................dis 10 %
Cotton.............................new list, Aug., '83, dis 10 %
Wool...............................new list, Aug., '83, dis 10 %

Carpet Stretchers.
Cast Steel, Polished.....................₩ doz $5.00, dis 30 %
Cast Iron, Steel Points..................₩ doz $2.00, dis 50&5 %
Socket.......................................₩ doz $2.50, dis 25 %
Bullard's...dis 25 %

Casters.—Bed...dis 50 %
Plate..dis 50 %
Shallow Socket...dis 50 %
Deep Socket..dis 50 %
Martin's Patent (Phoenix)..........................dis 25@33⅓ %

Cattle Leaders.
Humason, Beckley & Co.'s.............................dis 70&10 %
Sargent's..dis 70&10 %
Hotchkiss...dis 25 %
Peck, Stow & W. Co...................................dis 33⅓&10 %

Chain.
Trace, 6½-10-2.................................₩ pair 79c | dis 35 %
Trace, 6½-10-3.................................₩ pair 70c
Trace, 7-10-2....................................₩ pair 86c
German Halter Chain, list of Dec. 31, 1881...........dis 55 %
German Coil, list of Dec. 31, 1881......................dis 55 %
Covert Halter, Hitching and Breast....................dis 35&5 %
Oneida Halter Chain (old list)............................dis 45 %
Galvanized Pump Chain..............................₩ ℔ 9½c net
Jack Chain, Iron.....................................dis 60&10&5 %
Jack Chain, Brass..dis 60 %

Chalk.
White..₩ gross 60c net
Red...₩ gross 80c net
Blue..₩ gross $1.00 net
White Crayons..₩ gross 10c net

Chalk Lines.—See Lines.

Chisels.
Socket Framing, Crossman..............................dis 65&5 %
Socket Framing, Arlington Edge Tool Co. | dis. 70 @ 70 & 10 %
Socket Framing, Merrill
Socket Framing, Witherby Tool Co.
Socket Firmers, Arlington Edge Tool Co.
Socket Firmers, Merrill
Socket Firmers, Witherby Tool Co.
Socket Corner
Socket Framing and Firmer, Buck Bros ....dis 25 %
Socket Framing and Firmer, Douglass..dis 65&10&10 %
Tanged Firmers..dis 45 %
Tanged Firmers, Butcher's......................$5.00@$5.25 to £
Tanged Firmers, Spear & Jackson's.......................5.00 to £
Tanged Firmers, Buck Bros (Shank)........................5.25 to £

Clamps.
Iron, Providence Tool Co.'s Wrt. Iron..................dis 25 %
Iron, Adjustable, Gray's.................................dis 20 %
Iron, Adjustable, Lambert's..............................dis 20 %
Iron, Adjustable, Snow's.................................dis 40&5 %
Iron, Adjustable, Hammer's..............................dis 15 %
Iron, Adjustable, Stearns'...............................dis 20&10 %
Iron, Cabinet, Sargent's.................................dis 70&10 %
Iron, Carriage Makers', Sargent's...................dis 65&10&10 %
Iron, Eberhard Mfg. Co..................................dis 33⅓ %
Saw Clamps..See Vises

Clips, Axle.
Norway or Best..dis 55&5 %
Superior..dis 70 %

Cockeyes....dis 55 %

Cocks, Brass.
Racking | dis. ...55 %
Globe
Plain Bibbs
Ale and Beer

Coffee Mills.
Board and Box...dis 50 %
Wilson's..dis 50 %
Selsor's Pat..................$9.50, $10.50, dis 25 %
American (Enterprise Mfg. Co.)........................dis 20&10 %
The "Swift" (Lane Bros.)..................................dis 20&10 %
Webb's Patent...dis 45@50 %

Compasses, Dividers, &c.
Compasses...dis 60 %
Calipers..dis 60 %
Dividers..dis 60 %
Bemis & Call Co.'s Dividers..............................dis 60&5 %
Bemis & Call Co.'s Compasses and Callipers...dis 60&5 %
Bemis & Call Co.'s Wing & inside or outside..dis 60&5 %
Bemis & Call Co.'s Double.................................dis 60 %
Bemis & Call Co.'s (Call's Patent Inside).............dis 30 %
Excelsior..dis 50 %
Cook's Extension..dis 25 %
J. Stevens & Co's Calipers and Dividers....dis 25& 10 %

Coopers' Tools.
Bradley's...dis 10 @ 20 %
Barton's..dis 20 %

Corkscrews.—Humason & Beckly Mfg.Co.dis 33⅓ %
Clough's Pat..dis 33⅓ %

Corn Knives and Cutters.—Bradley's.......dis 10 %
Wadsworths...dis 25 %

Crow Bars.
Cast Steel..₩ ℔ 6½c
Iron, Steel Points..₩ ℔ 5 c

Curling Irons, &c.
⅜, ⅝, ¾ in., $1.80, 2.00, 2.40..........................dis 10 %
Curling Tongs.......................₩ doz $3.65, dis 10 %
Pinching Irons.......................₩ doz $7.50, dis 20 %

Curry Combs.
Fitch's..dis 50&10 %
Hotchkiss, Novelty, new list, July 1880..............dis 25 %
Hotchkiss, Excl. Supr. Champion......................dis 25 %
Rubber.................................₩ doz $10.00, dis 25 %

Curtain Pins.
Silvered Glass..net
White Enamel..net

Cutlery.
Meriden Cutlery Co. (Table).................................net
Am. Miller Bro.'s Cutlery Co..............................dis 25 %
Humason & Beckley, Pocket.............................dis 33⅓ %
Naugatuck Cutlery Co.....................................list net
Aaron Burkinshaw's Pocket..............................dis 25 %

Dividers..................................see Compasses

Dog Collars.—Embossed Gilt.......dis 30&10 %
Leather...dis 40 %
Brass...dis 40 %

Door Springs.
Torrey's Rod, regular size, ₩ doz., $3...................dis 50 %
Gray's Rod.........................per gross, $20 00, dis 15 %
Bee Rod..............................per gross, $20.00, dis 15 %
Warner's...dis 30 %
Gem (Coil):
No. 1, Large Japanned......₩ doz $4.00 | dis 50 & 10 %
No. 2, Medium, Japanned...₩ doz 2.75
No. 3, Small, Japanned......₩ doz 2.00
Star (Coil)—For Cop'd, Nickel-Plated &c., see list.
No. 4("Shoo Fly") Screen door size, ₩ doz $1.50 | dis 60 %
No. 5, Screen Door size..............₩ doz 2.00
No. 6, Medium.........................₩ doz 2.75
No. 7, Large ....₩ doz 4.00
Sabin's Lever..No. 1, $1; 2, $1.50; 3, $2; 4, $2.50..dis 35 %
Sabin's Boss..No. 1, ₩ doz. $4.00; 2 $2.75; 3, $2.dis 33⅓ %
Sabin's Crown..........................₩ doz $1.50, dis 33⅓ %
Philadelphia...............5 in., $5.00; 8 in., $7.75, dis 35 %
Cowell's.......No. 1, ₩ doz. $18.00; No. 2, $15.00, dis 50 %
Rubber, complete................₩ doz. $2.25, dis 20&10 %
Hercules..dis 40 %

Drawing Knives.
Arlington Edge Tool Co.....................................dis 70 %
Crossman's No. 1..dis 65&5 %
Morrill..dis 70 %
Nobles Mfg. Co...dis 15 %
Bradley's...dis 35 %
Adjustable Handle...dis 20 %
Witherby Tool Co..dis 70 %
Douglass...dis 70 %

Drills and Drill Stocks.
Blacksmiths'................................each, $2.50, dis 20 %
Blacksmiths' Self-Feeding..............each, $7.50, dis 20 %
Breast, P. S. & W......................................dis 20&10 %
Breast, Hotchkiss'...dis 20 %
Breast, Wilson's..dis 25 %
Breast, Millers Falls.......................each, $3 00, dis 25 %
Breast, Bartholomew's...................each, $2.50, dis 25&10 %
Ratchet, Merrill's...dis 20 %
Ratchet, Ingersoll's.......................................dis 25 %
Ratchet, Whitney's......................................dis 20&10 %
Ratchet, Weston's...dis 20 %
Ratchet, Moore's Triple Action........................dis 20&25 %
Whitney's Hand Drill, Plain, $11.00 Adjustable, $12.00..dis 20&10 %
Wilson's Drill Stocks......................................dis 10 %
Automatic Boring Tools......................each, $7.25, dis 20 %

Drill Chucks.
Morse's Beach Patent......................each, $8.00, dis 20 %
Morse's Adjustable........................each, $7.00, dis 20 %
Danbury....................................each, $8.00, dis 30 %

Egg Beaters.
Dover.......................................₩ doz. $2.50, dis 2 %
Monroe's...dis 50 %
National....................................₩ doz. $4.50, dis 33⅓ %
Standard....................................₩ gross, $18.00, dis 25 %
Family (T. & S. Mfg. Co.)......................₩ gross, $18.00, net
Acme..₩ gross, $12.00, dis 25 %
Triumph (T. & S. Mfg. Co.).....................₩ gross, $11.50, net

Elevator Buckets.
Mill E. Buckets, light, 3½ to 10 in. (Duc's Improved), ₩ 100, $15 00 @ $54.00......................................dis 10 %
Mill E. Buckets, heavy, 5 to 10 in. (Duc's Improved), ₩ doz. $5.60 @ $10.20..dis 10 %
Storehouse (Duc's Patent), 12 to 17, $12 @ $30....dis 10 %

Emery.
Regular numbers..₩ ℔ 8c
Flour and F. F...₩ ℔ 6½c
For Emery Paper and Cloth see Sand Paper.

Enameled and Tinned Ware.
Kettles...dis 50 %
Sauce Pans..dis 25 %
Tinned Sauce Pans...dis 25 %

Escutcheon Pins.
Brass...dis 50 %

Escutcheons.
Door Lock..................Same discounts as Door Locks
Brass Thread...dis 55 %
Wood...dis 25 %

Faucets.
Fenn's..dis 40 %
Bohren's Patent Rubber Ball..............................dis 25 %
Fenn's Cork Stops...dis 33⅓ %
Star...dis 55&10 %
Frary's Patent Petroleum...............................dis 20&10 %
West's Patent Key..dis 45 %
Anchor Lock...dis 45 %
Metallic Key, Leather Lined................................dis 60 %
Cork Lined...dis 70 %
J. Sommer's Best Block Tin Key.......................dis 40&10 %
J. Sommer's Cork Lined, 1st quality.......................dis 50 %
Self-Measuring, Enterprise....₩ doz. $36.00, dis 20&10 %
Self-Measuring, Lane's.........₩ doz. 36.00, dis 20&10 %
Self-Measuring, Victor.........₩ doz. $36.00, dis 25&10 %

Felloe Plates............................₩ ℔, 10c, dis 30 %

Files.
J. & Riley Carr.................new list April 1, '83, dis 15 %
J & Riley Carr Horse Rasps...............................dis 10%
Butcher's
Moss & Gamble...............................new list, dis 15 %
H. Disston & Sons...dis 40 %
Nicholson...dis 40 %
New American...dis 40 %
Union File Co..dis 40 %
Heller Bros.' Files..dis 40 %
Heller Bros.' Horse Rasps...............................dis 30&10 %
Western...dis 40 %
Stubs.................................new list, dis 25@30 %

Fluting Machines.
Knox, 4½-inch Rolls.......................$3.50 each | dis 35 %
Knox, 6-inch Rolls........................$4.00 each
Eagle 3½-inch Roll...............................$2.15, dis 35 %
Eagle, 5½-inch Roll...............................2.85, dis 35 %
Crown, 4½-in., $3.50; 6-in., $4.00; 8-in., $6.50 each, dis 35 %
Crown Jewel..............................6-in., $3.50 each, dis 35 %
American, 5-in., $3; 6-in., $3.40; 7-in., $4.50 each, dis 35 %
Domestic Fluter..................................$1.50 each, net
Geneva Hand Fluter, White Metal...₩ doz $12, dis 25 %
Crown Hand Fluter, Nos. 1, $15; 2, $12.50; 3, $10.00 ₩ doz..dis 30 %
Shepard Hand Fluter, No. 85.........per doz $15, dis 40 %
Shepard Hand Fluter, No. 110......per doz $8.75, dis 30 %
Shepard Hand Fluter, No. 95 ....per doz $6.50, dis 20 %
Clark's Hand Fluter......................₩ doz $15.00, dis 33⅓ %
Combined Fluter and Sad Iron....₩ doz $15.00, dis 30 %
Buffalo...................................₩ doz $10.00, dis 10 %

Fluting Scissors.......................................dis 45 %

Fly Traps.
Paragon......................................₩ doz, $3, net

Forks.
Hay, Manure and Spading..................................dis 50 %
Plated, A 1, Rogers & Bro........................dis 40&10&5 %
Plated, Reed & Barton............................dis 40&10&5 %

Fruit and Jelly Presses.
Enterprise Mfg. Co.......................................dis 20&10 %

Fry Pans.
Burnished list as follows............................dis 60&10&5 %

No	0	1	2	3	4	5	6	7	8
₩ doz	$3.00	3.75	4.25	4.75	5.25	6.00	7.00	8.00	9.00

"Acme"...dis 40&10 %

Gauges.
Marking Stanley's...dis 50&10 %
Marking, Chapin's...dis 55&10 %
Wire...dis 70&10 %
Wire, Disston's...dis 20 %
Wire, Wheeler, Madden & Co..............................dis 10 %

Gimlets.
Nail and Spike..dis 40&10 %
"Eureka" Gimlets...dis 40&10 %
"Diamond" Gimlets.......................................dis 40&10 %
Double Cut, Shepardson's...............................dis 40&10 %
Double Cut, Hartwell's...................................dis 40&10 %
Double Cut, Ives'..dis 40&10 %
Double Cut, Douglass'.......................................dis 40 %
"Bee"..₩ gro. $12.00, dis 25 %

Glue Pots.
Tinned and Enameled ....dis 33⅓ %
Family, Howe's "Eureka".....................................dis 25 %
Family, L. F. & C.'s "Handy"...............................dis 30&10 %

Grindstone Fixtures.
Sargents Patent..dis 70&10 %
Reading Hardware Co.......................................dis 30&10 %

Gun Wads.
U. M. C. B. E., 11 up........................$2.00 | dis 5&5 %
U. M. C. B. E., 9&10.............................2.30
U. M. C. B. E., 7&8..............................2.60
U. M. C. P. E., 11 up............................3.10
U. M. C. P. E., 9&10.............................4.00
U. M. C. P. E., 7&8..............................4.90

Halters.
Covert's Pat. Rope...dis 50 %
Covert's Horse and Cattle Ties.............................dis 50 %
Union Pat. Rope and Web...............................dis 40&10 %
Union Horse and Cattle Ties ....dis 40&10 %

Hammers.
Maydole's..dis 15 %
Cheney's, new list, March, 1883.........................dis 20&5 %
Hartford Hammer Co. (new list July 1, '81)...........dis 20 %
Humason & Beckley..dis 15 %
Verree...dis 5 %
Magnetic Tack, Nos. 1, 2, 3, $1.26, 1.50 and 1.75..dis 25&10 %
Nelson Tool Works..dis 40&10 %
Warner & Noble's..dis 10 %
Yerkes & Plumb..dis 30 %
Wilkinson's Smiths'...............................11½c ₩ ℔ net

Hand Cuffs and Leg Irons.
Providence Tool Co., Hand Cuffs, $15.00 ₩ doz.dis 10 %
Providence Tool Co., Leg Irons, $25.00 ₩ doz....dis 10 %
Tower's..dis 25 %

Handles.—Door or Thumb Latches.

Nos.	0	1	2	3	4	
Per doz	$0.80	1.00	1.18	1.35	1.50	dis 60&10 %

Roggin's Latches..........................₩ doz 35c @ 40c. net
Bronze Iron Drop Latches.........₩ doz $0.80 @ 0.90 net
Jap'd Store Door Handles—Nuts, $1.62; Plate, $1.10; no Plate, $0.88...net
Barn Door....................................₩ doz $1.60, dis 10&10 %
Wrought Chest..dis 70 %
Surface Chest...dis 60&10 %
Flush Chest...dis 70 %
Lifting..dis 60&10 %
Saw and Plane..dis 40&10 %
Boynton's Loop Saw Handles..........................50c, dis 50 %
Boynton's Centennial Saw Handles...................30c, dis 25 %
Hammer and Hatchet...dis 20 %
Brad Awl......................................₩ gross, $2.50 dis 10 %
Hickory Firmer Chisel, assorted, ₩ gross ..$4.50 | dis 20&10 @ 25&10
Hickory Firmer Chisel, large, ₩ gross 5.00
Apple Firmer Chisel, assorted, ₩ gross.......5.00
Apple Firmer Chisel, large, ₩ gross..........6.00
Socket Firmer Chisel, assorted, ₩ gross.......3.00
Socket Framing Chisel, assorted, ₩ gross......5.00
File assorted, ₩ gross..............................2.75
Auger, assorted, ₩ gross...........................5.00
Auger, large, ₩ gross...............................7.00

Patent Auger, Ives'..dis 20&10 %
Patent Auger, Douglass'..............................₩ set $1.25 net
Patent Auger, Swan's.................................₩ set $1.00 net

Hangers.
Barn Door, old patterns...................................dis 60&10 %
Barn Door, New England.................................dis 65&10 %
Climax (Anti-Friction)..dis 50 %
Challenge..dis 50 %
"Champion" Medina Mfg. Co...............$15; dis 50&10 %
Sterling Improved (Anti Friction).......................dis 65&10 %
Cheritree..dis 50 %
Kidder's..dis 50&5 %
U. S.....................................4 in., $12; 5 in., $15; dis 60 %
The "Boss"...dis 50&10 %
Terry's Patent....................5 in., $12; 3½ in., $10; dis 40 %
Cronk......No. 4, $12; No. 5, $14.40; No. 6, $21; dis 50

Harness Snaps.
Anchor (T. & S. Mfg. Co.)..................................dis 60@65 %
Henshaw's, list of 1½ changed to $14.00...........dis 60@65 %
Judd's, list of 1½ changed to $14.00...............dis 60 @ 65 %
Fitch's (Bristol), list of 1½ change to $14.00.dis 60 @ 65 %
Hotchkiss'..dis 10 %
Andrews'...dis 50 %
Sargent's..dis 70&10 %
German, low list, Sep., 1882...............................dis 33⅓ %
German, Sargent's new list...............................dis 60&10 %
Covert...dis 50 %
Covered Spring, new list, Oct., 1882....................dis 60&10 %
Union..dis 50&10 %
Union Improved German.................................dis 60&10 %

Hatchets.
Isaiah Blood..dis 30 @ 35 %
Shingling, Nos. 1 2 3..........₩ doz $7.25 $8.00 $8.75
Claw, Nos. 1 2 3..........₩ doz 7.75 8.50 9.25
Lathing, Nos. 1 2 3..........₩ doz 7.50 8.00 8.50
Hunt's..dis 25 %
Shingling, Nos. 1 2 3..........₩ doz $7.25 $8.00 $8.75
Claw, Nos. 1 2 3..........₩ doz 7.75 8.50 9.25
Lathing, Nos. 1 2 3..........₩ doz 7.30 .25 9.00
Hurd's..dis 30 @ 35 %
Shingling, Nos. 1 2 3..........₩ doz $8.00 $8.50 $9.00
Claw, Nos. 1 2 3..........₩ doz 9.00 9.50 10.00
Lathing, Nos. 1 2 3..........₩ doz 8.00 8.50 9.00
Yerkes & Plumb.....................................dis 30 @ 35 %
Shingling, Nos. 1 2 2..........₩ doz $7.50 $8.00 $8.50
Claw, Nos. 1 2 3..........₩ doz 8.25 8.75 9.25
Lathing, Nos. 1 2 3..........₩ doz 7.50 8.00 8.50
Simmons'...dis 30 @ 35 %
Shingling, Nos. 0 1 2 3..₩ doz $7 50 $8.00 $8.50 $9.00
Claw, Nos. 0 1 2 3..₩ doz 8.50 9.00 9.50
Lathing, Nos. 0 1 2 3..₩ doz 8.00 8.50 9.00
Broad, Nos. 1 2 3 4..₩ doz 9.00 10.00 12.00 14.00
Broad, Nos. 5 6 7 8..₩ doz 16.00 18.00 20.00 22.00
Collins..dis 10 %
Shingling, Nos. 1 2 3..........₩ doz $5.50 $6.00 $6.50
Claw, Nos. 1 2 3..........₩ doz 6.00 6.50 7.00
Lathing, Nos. 1 2 3..........₩ doz 5.50 6.00 6.50
Peck's Champion Blade...............................dis 30 @ 35 %
Shingling, Nos. 1 2 3..........₩ doz $8.00 $8.50 $9.00
Lath, Nos. 1 2 3..........₩ doz 8.00 8.50 9.00
Claw, Nos. 1 2 3..........₩ doz 9.00 9.50 10.00
Half, Nos. 1 2 3..........₩ doz 8.00 8.50 9.00
Ax Pattern, Nos. 1 2 3..........₩ doz 10.00 11.00 12.00

Hay Knives.
"Lightning"................................₩ doz $20.00 dis 10 %
Wadsworth's...dis 33⅓ %

Hinges.
Gate, Western..................................₩ doz $4.90 dis 55 %
Gate, N. E.....................................₩ doz $7.70, dis 55 %
Gate, N. E. Reversible.......................₩ doz $5 75, dis 55 %
Gate, Clark's, Nos. 1 2 3...................................dis 55 %
Gate, N. Y. State.............................₩ doz $5 05, dis 55 %
Gate, Automatic..............................₩ doz $12.50, dis 50 %
Gate, Common Sense.....................₩ doz pair $4 50, dis 50 %
Gate, Seymour's...dis 45&10 %
Gate, Shepard's.........Nos. 1, 2, 3, 10, 20 & 25, dis 50&10 %
Rolled Blind Hinges.....................................dis 60&10 %
Rolled Plate..dis 60&10 %
Rolled Raised..dis 60&10 %
Plate Hinges { 8, 10 & 12 in., $5.55 ₩ 100 ℔ | ..dis 10 %
"Providence" { over 12 in., $4.50 ₩ 100 ℔
Screw Hook and { 8, 10, 12 in., $7.00 ₩ 100 ℔ | ..dis 10 %
Strap. { 14 to 36 in. $5.75 ₩ 100 ℔
Heavy Welded Hook { 8 to 12 in., $7.00 ₩ 100 ℔ | dis 10 %
{ 14 in& up, $6.50 ₩ 100 ℔
Screw Hook and Eye........... ⅝ & 1 in. 9c | dis 20 %
¾ in., 9c
⅝ in., 10c
½ in., 12c
Wrought Strap and T.....................dis 60&10&2 % @ ——

Hoes.
Riveted Shank..............................₩ doz $5.00, dis 50 %
Socket..₩ doz $5.25, dis 50 %
Planters'..dis 50 %
Scovill Pattern..dis 50 %
Handled Planters'..dis 50 %
Magic..₩ doz $5 net
Grub..₩ doz $11, dis 50 %

Hooks.
Bird Cage, Sargent's list.................................dis 60&10 %
Bird Cage, Reading..dis 40&10 %
Cotton...₩ doz $4.00, dis 50 %
Cotton Patented (N. Y. Mallet & Handle W'ks), dis 30 %
Cotton (Humason & Beckley Mfg. Co)....................dis 40 %
Belt..dis 60&10&10 %
Bench—Hotchkiss' $5.00 ₩ doz..............................dis 10 %
Weston's, No. 1, $10.00; No. 2, $9.00 ₩ doz...dis 25&10 %
McGill's, $3.00 ₩ doz..dis 10 %
Morrill's, $9.00 ₩ doz...dis 50 %
Clothes Line, Sargent's list.................................dis 65&10 %
Clothes line, Reading list...............................dis 45&5&10 %
Ceiling, Sargent's list.................................dis 60&10&10 %
Harness, Reading list..................................dis 40&10&10 %
Coat and Hat, Sargent's list...........................dis 60&10&10 %
Coat and Hat, Reading..................................dis 40&10&10 %
Wire Coat and Hat, Gem...................................dis 40&10 %
Wire Coat and Hat, Miles'...................................dis 70 %
Picture Hooks, Brown's Pat. Solid Brass, $4.00 ₩ gross...dis 25 %
Tassel and Picture (T. & S. Mfg. Co.).......................dis 50 %
Wrought Staples and Hooks & Staples..dis 70&7½&10 %
Wrought Staples, Stanley's list.................dis 70&7½&10 %
Wire Screw Hooks and Eyes...new list, dis 70&10&— %
Grass and Bush..dis 45@50 %
Whiffletree—Patent..dis 40@45 %
Hooks and Eyes—Malleable Iron..........................dis 60&10 %
Hooks and Eyes—Brass......................................dis 60&10%

Horse Nails.

	Nos. 5	6	7	8	9	10	
Ausable, ₩ ℔	31c	28c	26c	25c	24c	23c	dis 30&10 %
Clinton, Plain, ₩ ℔	23c	21c	21c	20c	19c	18c	dis 30&10 %
Clinton, Fin., ₩ ℔	24c	22c	21c	20c	19c		dis 30&10 %
Essex, ₩ ℔	31c	28c	26c	25c	24c	23c	dis 30&10 %
Putnam "	27c	24c	22c	21c	20c	19c	dis 5&7 %
Vulcan, "	26c	23c	21c	20c	19c	18c	dis 12½ %
Globe, "	24c	21c	19c	18c	17c	16c	dis 12½ %
A. C., "	26c	23c	21c	20c	19c	18c	dis 10&10 %
Ch'mpl'in Forged "	31c	28c	26c	25c	24c	23c	dis 30 %
New Haven, "	31c	28c	26c	25c	24c	23c	dis 30&10 %
Bridgewater, "	24c	21c	19c	18c	17c	16c	dis
Saranac, "	26c	23c	21c	20c	19c	18c	dis 25%

Horse Shoes.—Burden............................₩ keg $4.37½
R. I. Horse Shoe Co., Perkins' Improved Light, Medium and Heavy.......................₩ keg $4.37½
Walker's Forged, Light, Med. or Heavy .₩ keg $4.37½
Mule Shoes..₩ keg $5.37½
Dunning's Steel...₩ keg $9.25

Ice Awls, Chisels, &c.
American Ice Chisel..............................₩ doz $3.00 net
National Ice Chisel.......................₩ doz $6.25 dis 20 %
Novelty Ice Breakers.....................₩ doz. $6.25 dis 40 %
White's Sliding Head Picks..............₩ doz $2 50 dis 40 %
Dunlap's Ring Picks.......................₩ doz $2.00 dis 20 %
Wood Head Picks, Sargent's.............₩ doz $1 60 dis 50&10 %
Iron Head Picks, Sargent's..............₩ doz $1.25 dis 50&10 %
Ice Mallets, Pick in head................₩ doz $1.75 dis 15 %
Ice Mallets, Pick in Handle..............₩ doz $2.00 dis 15 %
Ice Axes, Small Cast or Malleable..₩ doz $1.20 dis 10 %
Combination Ice Tools...........................₩ doz $2.00 net

Ice Cream Freezers.
Amn. Mch. Co..dis 40 %
Torrey's...dis 40 %
Packer's...dis 40 %

Ice Creepers.
Safety Reversible..........................₩ gross $25 | dis 10 %
Arctic Solid..................................₩ gross $30

Ice Tongs.
Champion..............................₩ doz $6.00 dis 20&10 %
Family..................................₩ doz $2.75 dis 15 %

Kettles.
Brass, 7 to 13 inches inclusive.....................₩ ℔ 28c net
Brass larger than 13 inches..........................₩ ℔ 32c net

Knives.—Ames' Butcher Knives ....dis 20 %
Ames' Shoe Knives...dis 15 %
Ames' Bread Knives....................₩ doz $1.50 dis 15 %
Moran's Shoe and Bread Knives............................dis 20 %
Hay and Straw, Wadsworth's...............................dis 33⅓
Table and Pocket.....................................See Cutlery

Knobs.
Carriage (Jap'd 80c ₩ gross).........................dis 60&10 %
Base, Rubber Tip.....................................dis 65&10&10 %
Hemacite Door Knobs.......................new list, dis 35&5 %
Door Mineral | Same discounts as Door Locks.
Door Por. Jap'd
Door Por. Plated
Door Por.
Furniture Plain....................75c gross inch, dis 10 %
Furniture, Wood Screws.................................dis 25&10 %
Picture, Judd's..dis 60&10&10 %
Picture, Sargent's.......................................dis 60&10 %
Hemacite, Picture..dis 35 %
Shutter, Porcelain.......................................dis 60&10 %

Ladles.
Melting, Sargent's..dis 50&10 %
Melting, Reading...dis 30&10 %
Melting, Monroe's Patent...............₩ doz $4.00 dis 40 %
Melting, P. S. & W..dis 30&10 %

Lanterns.
Tubular.........................No. 0, $7.50; No. 1, $9.00 | net
With Guards, 40c extra
Nail City..........................No. 1 ₩ doz $10; No. 2, $9, net
Meteor.....................No. 1, ₩ doz, $9.50; No. 2 $8.50, net
Hurricane, No. 2......................................₩ doz $5.75, net
Peerless, No. 5.......................₩ doz $11.75, dis 10&10 %
Brady's Patent...dis 10&10 %
Ætna...dis 10&20 %
Yankee..dis 10&10 %
De Beque..dis 10&10 %
Police Small, $6.50; Med., $7.75; Large, $10.00..dis 15 %
Convex Reflector..............................$2.7 ₩ doz, dis 15 %

Lemon Squeezers.
Porcelain Lined ....₩ doz $6.00, dis 35 %
Wood....................................₩ doz 3.00, dis 35 %
Eureka, Tinned.........................₩ doz 8.00, dis 10 %
Dunlap's Improved....................₩ doz 3.75, dis 20 %
Sammis'...No. 1, $5 2, $8.40; 12, $15 ₩ doz; dis 25&10 %
Townsend's Patent...................$6 00 ₩ doz, dis 33⅓ %
Jennings "Star"................................$2.00 ₩ doz net
The "Boss".........................₩ doz $4.00, dis 10&10 %
Dean's Nos. 1, ₩ doz, $15.00; 2, $9.00; 3, $5.00 dis 40&10 %

Lines.—Linen Fish.....................................dis 25&10 %
Cotton Chalk..dis 55 %
Silver Lake, Braided, Nos. 0, $6.00; No. 1, $6.50; No. 2, $7.00; No. 3, $7.50 ₩ gross.........................dis 20 %
Masons' Linen, No. 3½, $1.50; No. 4, $2; No. 4½, $2.50...net
Masons' Colored Cotton.....................................dis 45 %
Wire Clothes, Galvanized......................each 20c@40c net

Locks and Latches.
Cabinet, Eagle | Changes made in list price of some numbers Jan. 1, 1881, dis 40 %
Cabinet, Gaylord
Cabinet, Bridgeport
Cabinet, P. & F. Corbin..dis
Cabinet, A. E. Deitz...dis 30@40 %
Cabinet, Stoddard Lock Co................................dis 25 %
Trunk, new list, Jan. 1, 1881..............................dis 10&2 %
Langstroth & Crane's List, Jan. 1, '77:
Round Key, Nos. 1 to 5...................................dis 40&10 %
Round Key, Nos. 5½ to 12..............................dis 40&10 %
Flat Key..dis 33⅓&10 %
A. E. Deitz, Flat Key.......................................dis 30@40 %
Yale Lock Co., Flat Key....................................dis 40&10 %
"Shepardson" or "U. S."...................................dis 30&40 %
"Felter" or "American"....................................dis 40&10 %
Plate...dis 33⅓&2 %
F. Many's "Extension Cylinder".................$10.50 ₩ doz net
Barnes Mfg. Co...dis 40 %

DOOR LOCKS, ETC.

Branford | Circular Prices Revised list of June 14, 1881 dis 40 % and 2 % for cash.
Norwalk
Norwich
P. & F. Corbin
Russell & Erwin
Mallory, Wheeler & Co.
Nimick & Brittan Hardware Mfg. Co.
Whipple Mfg. Co.
Reading Hardware Co. (low list).......................dis 40&2
Padlocks—Russell & Erwin | dis 30&10 % and 2 % for cash
Mallory, Wheeler & Co.
Norwich Lock Mfg. Co.
Wm. Wilcox & Co.
Yale Lock Mfg. Co.'s "Standard".............................dis 40 %
Romer's..dis 25@40 %
Conestoga..dis 60 %
Scandinavian (Moore Bros.).................................dis 80 %
J. H. McWilliams...dis 45 %
A. E. Dietz...dis 35 %
"Star"...dis 45 %
Fraim & Bro. (new list)......................................dis 50&10 %
Barnes Mfg. Co...dis 40 %

Lustre.—4 oz. bottles, ₩ doz. $1.75 ₩ gross $17.00 net

Mallets.—Hickory..dis 20&10 %
Lignumvitæ..dis 20&10 %
Penfield Block Co., Lignumvitæ & Hickory ..dis 30 %

Meat Cutters.
Dixon's (P.S.&W.) Nos. 1 2 3 4 ₩ doz...$14.00 17.00 19.00 30.00—dis 25&5
Miles' Challenge.........Nos. 1 2 3 ₩ doz...$22.00 30.00 40.00—dis 40 %
Perry's. Nos. 1 2 3 4 g'rd 5 g'rd Each...$3.00 4.00 5.00 11.00 15.00 36.00—dis 25&5 %
Woodruffs (P. S. & W.).........Nos. 100 150 ₩ doz...$15.00 18.00—dis 20&2 %
Hales'.........Nos. 11 12 13 ₩ doz...$27.00 33.00 45.00—dis 50&10&10 %
Draw Cut..Nos. 5 2 6 8 10 Each...$60.00 75.00 80.00 225.00 100.00—dis 20 %
American...dis 20&10 %
Nos. 1 2 3 4 B Each...$5.00 7.00 10.00 25.00 60.00
Enterprise..dis 25 %
Nos. 10 12 22 2 Each...$3.00 2.50 4.00 6.00 10.00
Kieser's No. 55..................................$40 ₩ doz, dis 20 %
Kieser's Gem......................................$25 ₩ doz, dis 20 %
Kieser's Monarch.................................$45 ₩ doz, dis 20 %
Kieser's Butcher................................$40 each, dis 20 %
Silver & Deming...dis 30 %
Pennsylvania...dis 40&10 %
Nos. 1 2 3 8 ₩ doz...$24.00 28.00 36.00 28.00
Beef Shavers (Enterprise Mfg. Co.)......................dis 20 %

Mincing Knives.
Am. (2d quality), ₩ gross, 1 blade, $7 2 blades, $12 3 blades, $18...net
Lothrop's...dis 20&10 %
Smith's, ₩ doz, Single, $2.25; Double, $3...dis 33⅓&10 %
Cowles Hdw. Co..dis 55 %

Molasses Gates.
Stebbins' Patterns..dis 70&10 %
Stebbins Genuine..dis 67½&10 %
Stebbins Tinned Ends......................................dis 60&10 %
Chase's Hard Metal...dis 40&10 %
Bush's...dis 50 %
Lincoln's Pattern..dis 60&10 %
Weed's...dis 50 %
Boss Nos. 1 2 3 4 $7.00 8.00 9.00 10.00..₩ doz. dis 60&10&10 %

Nails....See Trade Report

Nuts and Washers.—(In lots less than 100 ℔ add ½c to list; 1 lb. boxes, add 1c to list.)
Square Nuts..8c off list
Hexagon Nuts...8c off list
Washers...7½c off list

Nut Crackers.
Table (Humason & Beckley Mfg. Co.)....................dis 33⅓ %
Blake's Pattern............................₩ doz $2.00, dis 10 %
Turner & Seymour Mfg. Co...................................dis 50 %

Oakum.—In on 100 bales and over ½ % ₩ ℔.
Best...₩ ℔ c
U. S. Navy.......................................₩ ℔ c
Navy..₩ ℔ c

Oilers.—Zinc and Tin ....dis 50 %
Brass and Copper...dis 50 %
Malleable (Hammer's)....................₩ doz. $6.00, dis 50 %
Prior's Patent or "Paragon" Zinc........................dis 50 %
Prior's Patent or "Paragon" Brass......................dis 40 %
Olmstead's, Tin and Zinc..................................dis 50 %
Olmstead's, Brass and Copper............................dis 50 %
Broughton's, Zinc..dis 60 %
Broughton's, Brass..dis 50 %

Packing, Steam.
N. Y. Belting and Packing Co...............................dis 20 %

Pencils.
Faber's Carpenters'.................................high list, dis 50 %
Faber's Round Gilt.................................₩ gross $4.50, net
Dixon's Lead..₩ gross $4.50, net
Dixon's Lumber.......................................₩ gross $6.75, net
Dixon's Carpenters'..dis 40&10 %

Picks.
Railroad, 5 to 6, $11.00; 6 to 7, $12.00....................dis 50 %
Adze Eye, 5 to 6, $12.00; 6 to 7, $13.00....................dis 50 %

Picture Nails.
Brass Head, Sargent's list....................................dis 60&10 %
Brass Head, T. & S. Mfg. Co.................................dis 50&10 %
Porcelain Head, Sargent's list..............................dis 60&10 %
Porcelain Head, Judd's list.............................dis 40&10&10 %
Porcelain Head, T. & S. Mfg. Co............................dis 50&10 %
Niles' Patent..dis 33⅓ %

Pinking Irons..................................₩ doz 75c, net

Plaiting Machines.
Magic...₩ doz $10.00, net
Astor Plaiting Machine.......................each $15.00, dis 20 %
Crown Plaiting Machines...................................dis 25 %
6 in., $6.00; 10 in., $8.00 each.

Planes and Plane Irons.
Bench, First Quality...dis 20 %
Bench, Second Quality..dis 20 %
Molding...dis 20 %
Bailey's (Stanley R. & L.Co.) new list, Jan.'79..dis 20&10 %
The Stanley (S. R. & L. Co.) new list, Jan.'79..dis 20&10 %
Bailey's "Victor"..dis 20 %
Defiance Adjustable...dis 20 %
Laflin Mfg. Co...dis 35 %
Plane Irons, Butcher's..............................$5.00 @ $5.25 to £
Plane Irons, Buck Bros.......................................dis 25 %
Plane Irons, Auburn Tool Co...............................dis 20&10 %
Plane Irons, The Globe Mfg. Co., "Baldwin Iron"..dis 20 %
Plane Iron, Ohio Tool Co.....................................dis 20&10 %
Plane Irons, Sandusky Tool Co.............................dis 20&10 %

Pliers and Nippers.
Button's Patent..dis 33⅓ %
Hall's Pat. Compound Lever Cutting Nippers, No. 2, 5 in., $13.50; No. 4, 7 in., $21.00 ₩ doz...............dis 25 %
Humason & Beckley Mfg. Co.................................dis 50&10 %
Gas Pliers...dis 60 %
Eureka Pliers and Nippers..................................dis 50&10 %
Russell's Parallel...dis 40 %
P. S. & W. Cast Steel.......................................dis 33⅓&10 %
P. S. & W. Tinners' Cutting Nippers.........add 5 % dis 60 %

Plumbs and Levels.
Disston's...dis 40 %
Stanley R. & L. Co.'s Pat. Adjustable......................dis 60&10 %
Stanley R. & L. Co.'s Non Adjustable.....................dis 60&10 %
Chapin's Patent Adjustable.................................dis 60&10 %
Chapin's Non-Adjustable....................................dis 60&10 %
Standard Rule Co.'s New Adjustable......................dis 60&10 %
Standard Rule Co.'s Non-Adjustable.......................dis 60&10 %
Johnson's Patent Adjustable.................................dis 40 %
Pocket Levels...dis 50&10 %
Davis' Inclinometers...dis 30 %

Post Hole and Tree Augers.
Samson Post Hole Digger......................₩ doz $37.50, dis 20 %
Fletcher Post Hole Augers..................₩ doz $36.00, dis 20 %
Vaughan's Post Hole—
6 in., $25.00; 7, 8 and 9 in., $21.00 ₩ doz, dis 25 %
Eureka Diggers ₩ doz $27.00...................................net
Leed's each $1.10...net

Pruning Hooks and Shears.
Disston's Combined Pruning Hook and Saw, ₩ doz $12.50, dis 20 %
Disston's Pruning Hook...............................₩ doz $12.00, dis 20 %
E. S. Lee & Co.'s Pruner......................................dis 33⅓ %
Pruning Shears...dis 60&10 %
Wheeler, M. & Co.'s Combination.............₩ doz $18.00, dis 25 %
Dunlap's Saw and Chisel..................₩ doz $20.00, dis 25 %

Pulleys.
Hot House and Tackle...dis 50&10 %
Jap'd Screw...dis 60&10 %
Brass Screw..dis 60&10 %
Jap'd Side..dis 60&10 %
Jap'd Clothes Line..dis 60&10 %
Hay Fork, Solid Eye.......$4.50; Swivel, $5.00, dis 60&10 %
Hay Fork, "Anti Friction".........................$6.75, dis 60&10 %
Hay Fork, "F" Common and Pat. Bushed.............dis 25 %
Hay Fork, Tarbox Pat. Iron...................................dis 50 %
Shade Rack...dis 25 %

Punches.
Belt or Drive......................₩ doz $2.00; 2.25; 4.00, dis 10&10 %
Bemis & Call Co.'s Cast Steel Drive........................dis 40&10 %
Bemis & Call Co.'s Springfield Socket......................dis 50&10 %
Spring...................................₩ doz $7.00, dis 10&10 %
Spring, Leach's Patents......................................dis 40&10 %
Bemis & Call Co.'s Spring and Check......................dis 50&10 %
Solid Tinners'.................................₩ doz $1.44, dis 10 %

Rail.
Sliding Door, Wrought Brass.............₩ ℔ 45c, dis 10 %
Sliding Door, Bronzed Wrt. Iron..........₩ foot 10c, dis 10 %
Sliding Door Iron, Painted..................₩ foot 6c, dis 10&10 %

Barn Door....Inch ...... ½ ⅝ ¾
Per 100 feet $2.60 3.60 5.60—dis 10 %
B. D. for N. E. Hangers—
Small. Med. Large.
Per 100 feet..............$2.10 2.70 .30—net
Terry's Wrought Iron, 50c ⅌ foot. ....net

Razors.
J. R. Torrey Razor Co. ....dis 15 %

Razor Strops.
Genuine Emerson...............................dis 45 %
Badger's (not Emerson).......................dis 33⅓ %
Imitation Emerson.............⅌ doz $2.00, dis 25 %
Hunt's.......................................dis 40&5 %
Chapman.......................................dis 15 @ 2 %
Saunder's.......................................dis 10 %
Torrey's.......................................dis 20

Rivets.
Iron and Tinned, new list, Dec. 10, 1881. ....dis 40 %
In bulk. new list, Dec. 10, 1881..................dis 10 %
Copper Rivets and Burrs ....dis 50 %
Nos.. 7 8 9 10 11 12 13 14 15
⅌ ℔. 49c 50c 52c 54c 56c 58c 60c 65c 70c

Rivet Sets.......................................dis 40 %

Rods.
Stair, Brass.......................................dis 25 %
Stair Black Walnut ....60c. ⅌ doz. dis 10 %

Rollers.
Barn Door, Sargent's list.............. dis 60&10&10 %
Acme (Anti-Friction)...............................dis 50 %

Rope.
Mnfs' List, September 24, 1883...............dis 10 ⅌ ℔
Manila.... ....⅝ inch and larger ⅌ ℔ 16 c
Manila.......................................⅜ inch ⅌ ℔ 16½c
Manila......................¼ and 5-16 inch ⅌ ℔ 17 c
Manila, Tar'd Rope...............................⅌ ℔ 15½c
Manila, Tar'd Lath Yarn...........................⅌ ℔ 15½c
Manila, Hay Rope ....⅌ ℔ 16 c
Sisal. ....⅝ inch and larger ⅌ ℔ 10½c
Sisal.......................................⅜ inch ⅌ ℔ 11 c
Sisal......................¼ and 5-16 inch ⅌ ℔ 11½c
Sisal, Hay Rope ....⅌ ℔ 10½c

Rules. Boxwood. Ivory.
Chapin's.........
Standard......... } dis 70&10 % { dis 45&10 @ 55&10 %
Stanley.........
Stephens..................dis 70&10 %......dis 55 %

Sad Irons.
From 4 to 10....................................⅌ ℔ 3¼c net
Self-Heating....................................⅌ doz $9.00 net
Self-Heating, Tailors'...........................⅌ doz $18.00 net
Gleason's Shield and Toilet.......................dis 25 %
Mrs. Pott's Irons, Doubled Pointed................dis 35 %
Mrs. Pott's Irons Square Back.....................dis 35 %
Enterprise Star Irons, new list, July 20, 1882...dis 35 %
Combined Fluter and Sad Iron....⅌ doz $15.00, dis 15 %
Chinese Laundry (N. E. Butt Co.)..........8½c, dis 15 %
New England.....................................5c dis 15 %

Sand Paper and Emery Paper.
Baeder & Adamson's Flint, 00 to 1½ .$4.50 ⅌ ream }
Baeder & Adamson's Flint, 2, 2½ & 3. 5.00 ⅌ ream } dis
Baeder & Adamson's Flint, Assorted. 4.75 ⅌ ream } 30&5 %
Baeder & Adamson's Star............ 3.75 ⅌ ream }
Baeder & Adamson's Emery..⅌ ream $6.50 @ 11.50 }
Bartles Best Flint, Nos. 00 to 1½ ....⅌ ream $4.50 }
Bartles Best Flint, assorted.........⅌ ream 4.50 }
Bartles Best Flint, Nos. 2 to 3 ......⅌ ream 5.00 } dis
Bartles Best Flint, No. 3½...........⅌ ream 5.50 } 35 %
Columbia Flint, all Nos ....⅌ ream 4.00 }
Madison Mills Flint, all Nos.........⅌ ream 3.50 }
Bartles Emery Paper.... ⅌ ream $6.50 @ 11.00 }
Bartles Emery Cloth.....⅌ ream 18.00 @ 26.00 } dis 30 %
Crocus Cloth ....⅌ ream 18.00 @ ..... }
New England same list as B. & A. Flint.........dis 35 %
Gage's ....dis 30&5 %

Sash Cord.
Common...⅌ ℔ 13c net
Patent...⅌ ℔ 15c net
Silver Lake, Hemp.....................⅌ ℔ 50c, dis 10&5 %
Silver Lake, White Cotton.............⅌ ℔ 50c, dis 10&5 %
Silver Lake, Drab Cotton..............⅌ ℔ 55c, dis 10&5 %
Raw Hide, ⅌ foot, ¼ in., 5c.; 5-16 in., 7c.; ⅜ in., 10c.
....dis 15 %
Steel Ribbon...................................dis 10 %

Sash Locks.
Clark's, No 1, $10.00; No. 2, $8.00 per gross.....dis 33⅓ %
Ferguson's.....................................dis 33⅓ %
Morris...dis 40 %
Broughton's Burglar Proof ....dis 33⅓ %
Walker's.......................................net
Hammond's Window Springs.......................dis 25 %
Northup Window Springs. No. 1, $10.00 ⅌ gross..dis 15 %
"Common Sense," Japanned, Coppered and Bronzed. ....⅌ gross $5.00 net
"Common Sense," Nickel Plated..⅌ gross $10.00 net
"Universal".....................................dis 30 %

Sash Weights.
Solid Eyes, in 500 ℔ lots and over...........⅌ ℔ 1⅝c net

Sausage Stuffers or Fillers.
Miles "Challenge"....................⅌ doz $20, dis 40 %
Perry.............⅌ doz. No. 15; No. 0, $21, dis 25&10 %
Draw Cut No. 4........................each $30.00, dis. 20 %
Enterprise Mfg. Co. ....dis 25 %
Silver's.......................................dis 25 %

Saws.
Disston's Circular, Mill and Cross Cut..........dis 40 %
Disston's Hand, Panel, Rip, &c..................dis 20 %
Boynton's Lightning Cross Cuts, new list.....dis 40 %
Boynton's Circular and Mill.....................dis 40 %
Boynton's Ice...................................dis 25 %
Boynton's Lightning Hand, Panel and Rip.......dis 25 %
Wheeler & Clemson Mfg. Co.'s Hand..............dis 30 %
W. M. & C. Mfg. Co. Cross Cuts.................dis 30 %
Livingston's Butcher and Kitchen................dis 20 %
Livingston's Framed Wood—
Nos 101 102 103 104 105
Per doz.....$10.00 8.50 10.00 7.50 6.20 net
Peace Circular and Mill.........................dis 40 %
Peace Hand, Panel and Rip.......................dis 25 %
Peace Cross Cuts................................dis 35 %
Peace Band Saws, all widths.....................dis 10 %
Richardson's Circular ....dis 40 %
Richardson's Mill and X Cut.....................dis 40 %
Richardson's Hand Panel, Butcher and Web Saws....................dis 25 %

Saw Frames.
White, Vermont ....⅌ doz $1.50. dis 25&10 %
Red, Polished and Varnished.......⅌ doz $1.50, dis 10 %
Saw Rods....................$10 list, dis 10 & 10 %

Saw Sets.
Boynton's Patent X Cut, per doz, $12.00; Hand Saw per doz, $10.00.....................dis 25 %
Stillman's Genuine........⅌ doz $3.50 and $5.50 dis 10 %
Stillman's Imitation............⅌ doz $3.25, dis 30&10 %
Common Lever....................⅌ doz $2.00, dis 30&10 %
Leach's...............No 0, $8.00; No. 1, $15.00, dis 15 %
Nash's...dis 20&10 %
Hammer, Hotchkiss..........................$5.50, dis 10 %
Hammer, Bemis & Call Co.'s new Patent.....dis 30&5 %
Bemis & Call Co.'s Lever & Spring Hammer..dis 30&5 %
Bemis & Call Co.'s Plate.......................dis 10 %
Bemis & Call Co.'s Cross Cut...................dis 12½ %
Aiken's Genuine......................$13.00, dis 50&10 %
Aiken's Imitation..........................$8.00, dis 55 %
Hart's Patent Lever............................dis 20 %
Disston's ....dis 20 %
Morrill's..........No. 1, $15 No. 5, $52, dis 40&5 %

Scales.
Hatch, Counter, No. 171............⅌ doz $42, dis 45 %
Hatch, Tea, No 161. ....⅌ doz $15.00, dis 45 %
Union Platform...........................$6.00, dis 45 %
Fairbanks'.....................................dis 25 %
Richie Bros ....dis 20 & 10 %
Buffalo Scale Co..........................dis 20&10 %
Forsyth Scale Co..........................dis 20&10 %
New York Standard Scale Co.....................dis 40 %
Howe's....................................dis 20&10 %
Chatillon's Grocers'...........................dis 40 %
Chatillon's Eureka.............................dis 25 %
Family Universal, 12 ℔, $30; 24 ℔ $36.............net
Family Favorite................................dis 30 %
Family, Turnbull's.............................dis 30 %
Scale Beams, List of January 12, 1882........dis 40&10 %

Scrapers.
Adjustable Box Scraper (S. R. & L. Co.), $6.50, dis 20&10 %
Box 1 Handle......................⅌ doz $4.00, dis 10 %
Box Handle........................⅌ doz $6.00, dis 10 %
Defiance Box and Ship.........................dis 20&10 %
Foot ....dis 50&10 %
Ship, common..............................⅌ doz $3.50 net
Ship. Providence Tool Co.......................dis 10 %

Screen Corners.
Porter's Pat Window and Door Frame......... dis 33⅓

Screw Drivers.
Douglas Mfg. Co.............................dis 20&10&10 %
Disston's......................................dis 40 %
Disston's Patent Excelsior.....................dis 40 %
Buck Bros ....dis 25 %
Stanley Rule & Level Co.'s, Varnished Hdls..dis 60&10 %
Stanley Rule & Level Co.'s, Black Handles..dis 50&10 %
Sargent & Co.'s................................dis 50&10 %
Gay's Double Action Ratchet
⅌ doz, 4 in., $9.00; 5 in., $10.20; 6 in., $12.00—dis 35 %
Mallett & Co.'s Double Action Clutch
⅌ doz, 4 in., $7.00; 5 in., $8.00; 6 in., $9.00—dis 15 %
Champion.......................................dis 25 %
Clark's Patent.............................dis 20&10 %

Screws.
Flat H'd Iron, new list, Dec. 27, 1882............dis 55 %
Round Head Iron, new list, Dec. 27, 1882.........dis 50 %
Flat Head Brass, new list Dec. 27, 1882..........dis 55 %
Round Head Brass, new list, Dec. 27, 1882.......dis 45 %
Brass and Silver Capped.......................dis 40 %
Japanned, list of Plain Screws...............dis 30&10 %
Coach, Patent Gimlet Point ....dis 70 %
Bed...dis 20&25 %
Machine, Flat Head, Iron......................dis 55 %
Machine, Round Head, Iron.....................dis 50 %
Bench, Iron.................................dis 55&10 %
Bench, Wood, Beech.................⅌ doz $3.00, dis 10 %
Bench, Wood, Hickory........................dis 20&10 %
Hand, Wood..................................dis 25&10 %
Hand Rail, Sargent's........................dis 66⅔&10 %
Hand Rail, Humason, Beckley & Co.'s.....dis 66⅔&10 %
Hand Rail, Am. Screw Co., list of Jan. 1, '81.....dis 70 %
Jack (Wilson's)................................dis 40 %

Screw Window Balances.
R. B. Hugunin's, No. 1, $2.10; No. 2, $1.75; No. 3 $1.60 ....⅌ doz net

Scroll Saws.
Lester, $10.00. ....dis 25 %
Rogers, $1.40. ....dis 25 %

Shears and Scissors.
American (Cast) Iron.....................dis 70@70&10 %
Pruning...................see Pruning Hooks and Shears.
Barnard's Lamp Trimmers.....................⅌ doz $1.75
Tinners'..............................add 6 %, dis 10 %
Seymour's, List, Dec., 1881....................dis 60 %
Heinisch's, List, Dec., 1881...................dis 60 %
Heinisch's Tailor's Shears.....................dis 33⅓ %
Mass. Cutlery Co. St. Trimmers.................dis 75 %
Cast Steel Trimmers............................dis 50 %
Wiss, J., & Sons' list, Dec., 1881.............dis 60 %
Wiss, J., & Sons' Tailors' Shears..............dis 50 %

Sheaves.
Sliding Door, M. W. & Co. list..............dis 50&10&2 %
Sliding Door, R. & E. list..................dis 60&10&2 %
Sliding Door Patent Roller ....dis 60&10&2 %
Sliding Door, Patent Roller, Hatfield's....dis 50&10&2 %
Sliding Door, Russell's Anti-Friction.....dis 50&10&2 %
Sliding Door Moore's Anti-Friction.............dis 60 %
Sliding Shutter R. & E. list................dis 60&10&2 %
Sliding Shutter, Sargent's list................dis 60&10 %
Sliding Shutter, Reading list..................dis 60&10 %
Moore's Anti-Friction (Hanging)................dis 60 %

Shovels and Spades.
Ames, New list, July 1, 1881 ....dis 15 %
Griffiths....................................dis 50&5 %
Old Colony.....................................dis 15 %
Payne Pettebone & Son, new list.............dis 40&10 %
Payne Pettebone & Son, R. R. Shovels...........dis 15 %
Remington's (Lowman's Patent)..................dis 30 %
Rowland's ....dis 50&5 %

Shovels and Tongs.
Iron and Brass Head, R. & E. list.........dis 60&10&2 %
Iron and Brass Head, P. S. & W...........dis 50&5&10 %
Polished Steel, new list.................dis 50&10&2 %

Slates.
Square Frames, by case.........................dis 70 %
Less than a case............................dis 65&10 %

Spoke Shaves.
Defiance Metallic...........................dis 20&10 %
Iron...dis 45 %
Wood...dis 30 %
Bailey's (Stanley R. & L. Co.), new list....dis 30&10 %
Stearns'....................................dis 30&10 %

Spoke Trimmers.
Bonney's......................⅌ doz $10.00, dis 40&5 %
Stearns'......................⅌ doz $9.00, dis 20&10 %
Ives'........No. 1, $15.00; No. 2, $12.00 ⅌ doz, dis 55&10 %
Douglass'.......................⅌ doz $9.00, dis 15 %

Spoons.
Basting.....................................dis 65&10 %
Solid Table and Tea............................dis 65 %
Britannia...................................dis 60&10 %
Reed & Barton.............................dis 40&10&5 %
Holmes, Booth & Haydens...................dis 40&10&5 %
German Silver.............................dis 30&10&5 %
Cast Steel, Silver Plated.....................dis 33⅓ %
Tin (P. S. & W.), Teas..............$1.25 ⅌ gross, net
Tin (P. S. & W.), Tables............$2.00 ⅌ gross, net
Tin (Cowles Hdw. Co.)..........................dis 10 %
Tin (Cowles Hdw Co.), case lots................dis 20 %

Squares.
Steel and Iron............................dis 50&10&2 %
Nickel Plated.............................dis 50&10&2 %
Try Square and T Bevels.....................dis 50&10 %
Disston's Try Square and T Bevels..............dis 40 %
Winterbottom's Try and Mitre................dis 20&10 %

Stocks and Dies.............................dis 5&10 %
"Lightning" Screw Plate........................dis 10 %

Stone.
Hindostan No. 1, 6c; Axe, 8c...................dis 40 %
Sand Stone....................⅌ ℔ 5c, dis 33⅓&10 %
Washita Stone.....................No. 1, ⅌ ℔ 16⅔c net
Washita Stone.....................No. 2, ⅌ ℔ 14c net
Washita Stone, Slips..............No. 1, ⅌ ℔ 30c net
Arkansas Stone No. 1. 4 to 6 in.......⅌ ℔ $1.35 dis 10 %
Arkansas Stone No. 1. 6 to 9 in.......⅌ ℔ $2.00 dis 10 %
Turkey Oil Stone (Chase).....4 to 8 in., ⅌ ℔, 60c, dis 10 %
Turkey Slips (Chase)..................$1.75 ⅌ ℔ dis 10 %
Lake Superior (Chase)...................⅌ ℔ 16c, dis 10 %
Lake Superior, Slips (Chase)............⅌ ℔ 30c, dis 10 %
Grindstones, Family, Loring's..................dis 10 %

Stove Polish.
Joseph Dixon's..................⅌ gross $6.00, dis 10 %
Gem.............................⅌ gross $4.50, dis 10 %
Gold Medal......................⅌ gross $6.00, dis 25 %
"Mirror"........................⅌ gross $6.00, dis 5 %
Lustro................................⅌ gross $4.75, net
Ruby..................................⅌ gross $3.75, net
Rising Sun............................⅌ gross $5.75, net
Dixon's Plumbago............................⅌ ℔ 8c, net
Boynton's Noon Day ⅌ gross No. 1, large, $5.50 No 2, small, $3; No. 3, medium, $4.

Tacks, Brads, &c.
New List, Sept. 1, 1882.
Tinned Swedes Tacks ....dis 30 % }
Tinned American Tacks..........................dis 30 % }
Swedes Tacks, all kinds........................dis 30 % }
American Cut Tacks.............................dis 30 % }
Copper Tacks and Nails.........................dis 30 % }
Swedes Hungarian Nails.........................dis 35 % }
Gimp and Lace Tacks............................dis 30 % }
Gimp and Lace Tacks, Tinned....................dis 30 % } Extra 10 % on all.
Finishing Nails................................dis 25 % }
Trunk and Clout Nails..........................dis 25 % }
Common and Patent Brads........................dis 20 % }
Basket Nails...................................dis 20 % }
Brush Tacks....................................dis 20 % }
Leathered Carpet Tacks.........................dis 20 % }
Cigar Box Nails................................dis 20 % }
Chair Nails....................................dis 20 % }
Double-pointed Tacks........................dis 40& 5 %

Tap Borers.
Common and Ring................................dis 20 %
Ives' Tap Borers............................dis 15&10 %
Enterprise Mfg. Co..........................dis 20&10 %

Tapes, Measuring.
American....................................dis 20&10 %
Spring...dis 40 %
Chesterman's..............regular list dis 15 @ 20 %

Thermometers.
Tin Case.......................................dis 80 %

Tobacco Cutters.
Enterprise Mfg. Co. (Champion)..............dis 20&10 %
Wood Bottom..................⅌ doz $10.00, dis 25&10 %
All Iron.........................⅌ doz $8.25, dis 35 %
Nashua Lock Co.'s..............⅌ doz $15.00 dis 50&5 %
Wilson's.......................................dis 50 %
Clipper (Sargent & Co.).......⅌ doz $18.00, dis 20 & 10 %

Toe Calks.
Winsted............................⅌ ℔ 9c, dis 5

Tinners' Tools and Machines.
Machines (P. S. & W.)..............list add 20 % } dis 10 %
Tools (P. S. & W.).......................add 6 % }

Transom Lifters.
Wollensak's Patent.............................dis 35 %
Reiher's Patent, new list, Feb., 1882.....dis 20&10&10 %
Excelsior.................................dis 50&10&2 %

Traps.
Game. Newhouse ....dis 35 %
Game, Oneida Pattern...........................dis 60 %
Game. Blake's Patent.........................dis 40&5 %
Mouse, Wood, Choker....................⅌ doz holes, 15c
Mouse, Round Wire..................⅌ doz $1.50, dis 10 %
Mouse Cage, Wire...................⅌ doz $2.50, dis 10 %
Mouse, Catch-em-alive..............⅌ doz $2.50, dis 15 %
Mouse, "Bonanza"..................per gross $10.00 net
Rat, "Decoy"......................⅌ doz $10.00, dis 10 %

Trowels.
Lothrops' Brick and Plastering.................dis 25 %
Reed's Brick and Plastering ....dis 15 %
Disston's Brick and Plastering.................dis 20 %
Peace's Plastering.............................dis 25 %
Clement & Maynard's............................dis 20 %
Rose's Brick...................................dis 15 %
Brades' Brick ....dis 25 %
Worrall's Brick and Plastering.................dis 20 %
Garden...dis 55 %

Triers.
Butter and Cheese..............................dis 25 %

Trucks (Warehouse, &c.
Penfield Block Co.'s list, 1882................dis 40 %

Vises.
Solid Box......................................dis 45 %
Solid, Peter Wright's..............................15½c
Solid, Wilkinson's..............................14@15c
Parallel, Fisher & Morris Double Screw....dis 15&10 %
Parallel, Parker's.............................dis 30 %
Parallel, Wilson's.............................dis 50 %
Parallel, Howard's..........................dis 20&10 %
Parallel, Bonney's...........................dis 33⅓ %
Parallel, Merrill's.......................dis 15 @ 20 %
Parallel, Sargent's.........................dis 60&10 %
Parallel, Backus and Union.....................dis 40 %
Parallel, Double Screw Leg.................dis 15&10 %
Parallel, Prentiss.............................dis 25 %
Parallel. Simpson's Adjustable...............dis 25&5 %
Saw Filers, Bonney's...........⅌ doz $20.00, dis 40 %
Saw Filers, Stearn's........................dis 20&10 %
Saw Filers, Hopkins'...........⅌ doz $17.50, dis 10 %
Saw Filers, Reading.........................dis 10&10 %
Saw Filers, Wentworth.......................dis 20&10 %
Cowell Hand Vises..............................dis 20 %
Richardson's Vise and Anvil....................dis 25 %

Washer Cutters.
Smith's Patent.....................⅌ doz $12.00, dis 25 %
Johnson's..........................⅌ doz $11.00, dis 33⅓ %
Penny's.........⅌ doz Pol. $17.50; Jap'd, $16.50, dis %
Appleton's....................⅌ doz $16.00, dis 60&10 %
Washers.—See Nuts and Washers.
Well Wheels.............................dis 60&10 %

Window Balances.
Hugunin Improved Pat. Screw, new list.........dis 40 %

Wire.
Brass and Copper.............................dis 33⅓ %
Market, Bright and Annealed, Nos. 0 to 18..dis 62½@65 %
Market, Coppered.........................dis 52½@57½ %
Market, Galvanized.......................dis 47½@50 %
Market, Tinned, Tinned list..............dis 47½@50 %
Stone, Bright and Annealed Nos. 19 to 26 ...dis 60@65 %
Stone, Bright and Annealed Nos 27 to 36..dis 62½@65 %
Stone, Galvanized Nos. 19 to 30 ....dis 47½@50 %
Stone, Tinned, Tinned list................dis 47½@50 %
Tinned Broom Wire.........................dis 57½@60 %
Cast Steel Wire...........................dis 47½@50 %
Annealed Fence, Nos. 8 & 9................dis 62½@65 %
Annealed Grape, Nos. 10 to 14.............dis 62½@65 %
Fence Staples...............................⅌ ℔ 5@5¼c
Fence Staples, Galvanized...................⅌ ℔ 6@6¼c
Stubs Steel Wire................$6.00 to £ dis 30 %
Japanned Barb Fence.........................⅌ ℔ 6¼c @ —
Galvanized Barb Fence.......................⅌ ℔ 7¼c @ —
Steel Music Wire, Nos. 7 to 30..............$1.00 ⅌ ℔
Picture Wire, T. S. & J........................dis 40 %
Clothes Line Wire, Galvanized.....⅌ coil 25 @ 40c net
Wire Cloth, green, drab and black, ⅌ sq. ft.

Wrenches.
American Adjustable............................dis 45 %
Baxter's Adjustable "S,".....................dis 20&5 %
Baxter's Diagonal..............................dis 30 %
Coes' Genuine................................dis 50&5 %
Coes "Mechanics"..........................dis 50&10&5 %
Coes' Pattern, Malleable.......................dis 75 %
Coes' Pattern Wrought ....dis 70 %
Girard Standard................................dis 60 %
Girard Agl.....................................dis 70 %
Bemis & Call's Patent Combination..............dis 20 %
Bemis & Call's Merrick's Pattern...............dis 35 %
Bemis & Call's Brigg's Pattern.................dis 25 %
Bemis & Call's Cylinder or Gas Pipe............dis 40 %
Aiken Pocket (Bright)...............$6.00, dis 50&10 %
The Favorite Pocket (Bright)..........⅌ doz $4, dis 40 %
Webster's Patent Combination...................dis 25 %
Taylor's Farmers'..............................dis 25 %

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Universal, XX, No. 1½..........................51.00
Universal, XX, No. 1...........................56.00
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Peerless, with Cogs, No. 2½....................45.00
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Peerless, with Cogs, No. 3.....................54.00
Peerless, with Cogs, No. 4.....................66.00
Eureka, No. 2..................................12.00
Novelty No. 2, for Common Tubs................$42.00
Novelty No. 3, for Common Tubs................$48.00
Excelsior No E. for Stationary Tubs...........$51.00
Excelsior No. F, for Stationary Tubs..........$57.00
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Excelsior No. B with Folding Bench............$64.00
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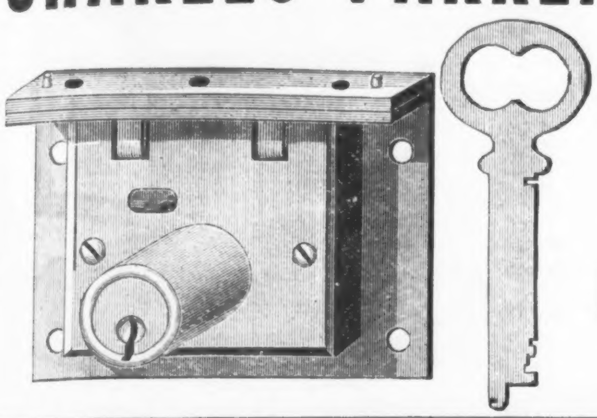

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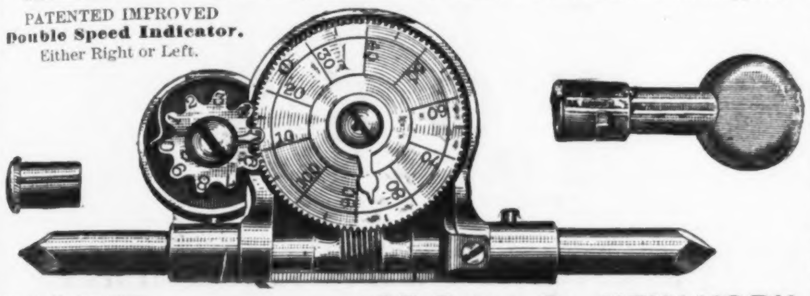

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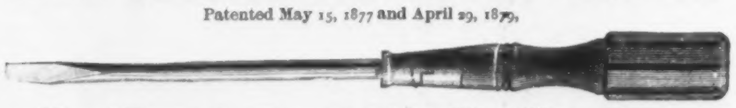

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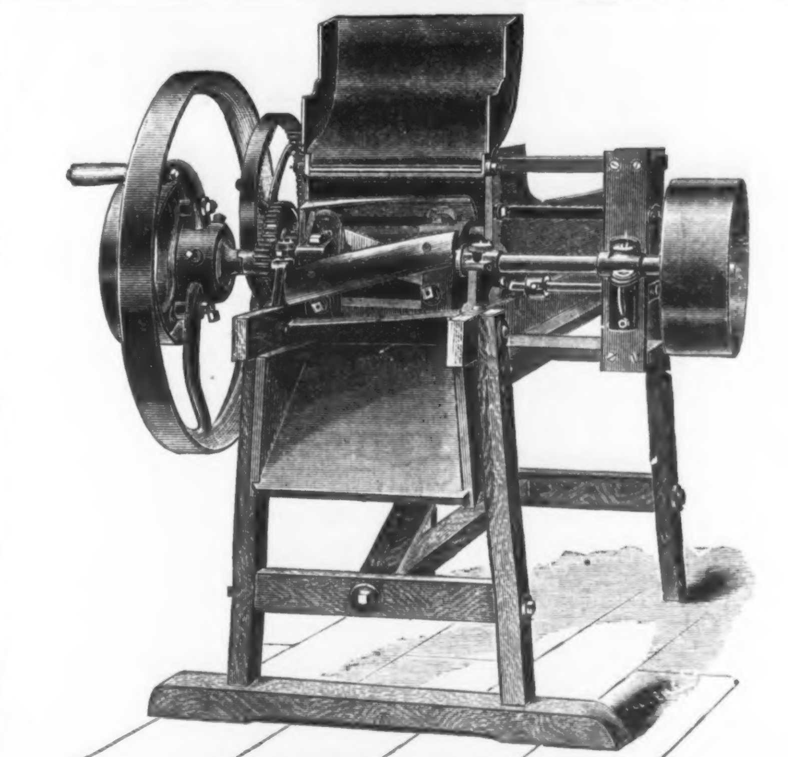

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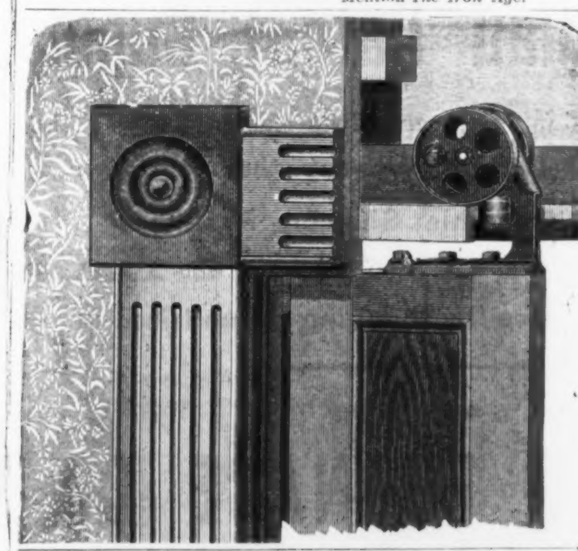

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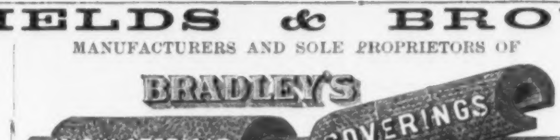

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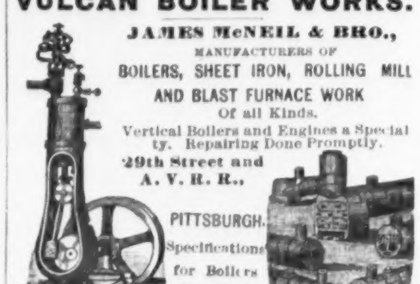

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Elbell, Gilliam & Co., Canton, Ohio.
Livingston & Co., Pittsburgh, Pa.
James Smart Mfg. Co., Brockville, Canada.
Burrows, Stewart & Milne, Hamilton, Canada.
R. M. Wanzer & Co., Hamilton, Can.
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Sidney Shepard & Co., Buffalo, N. Y.
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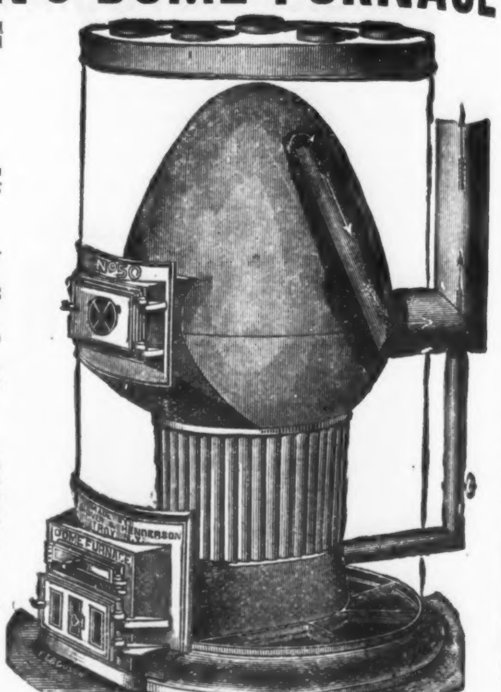

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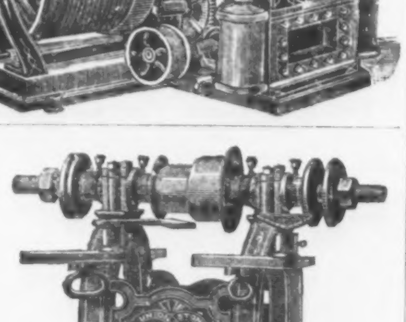

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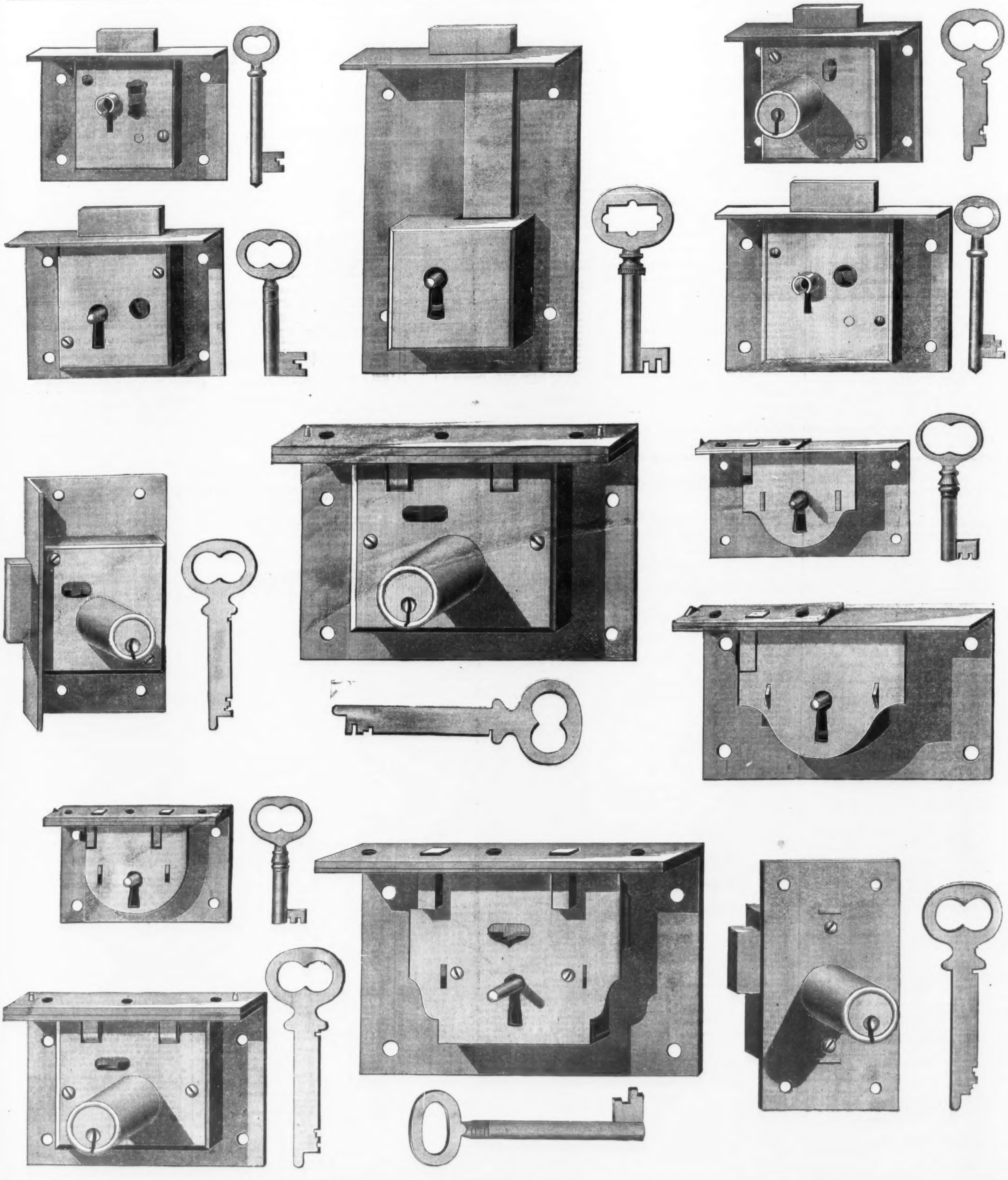

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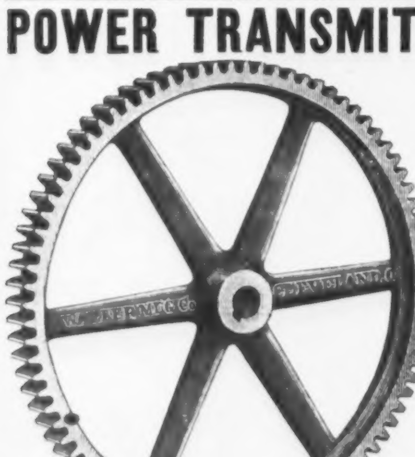

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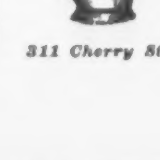

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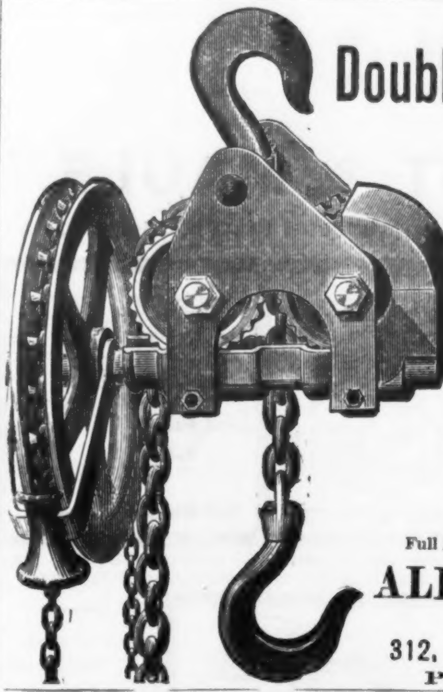

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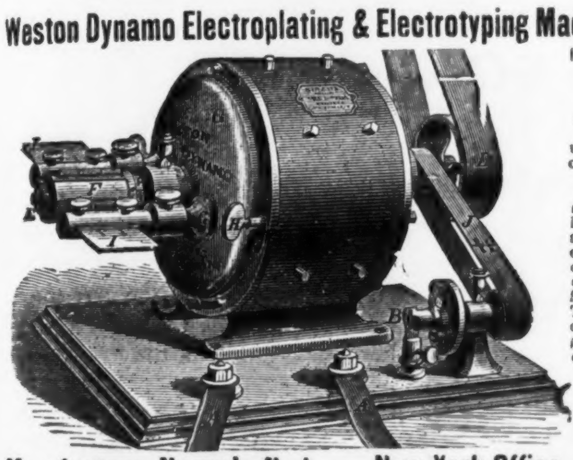

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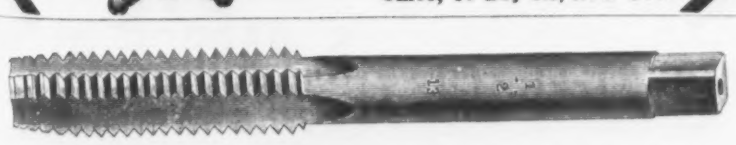

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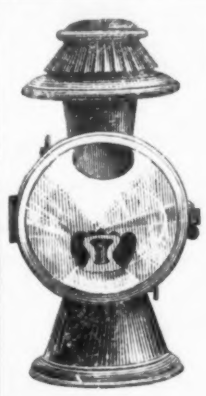

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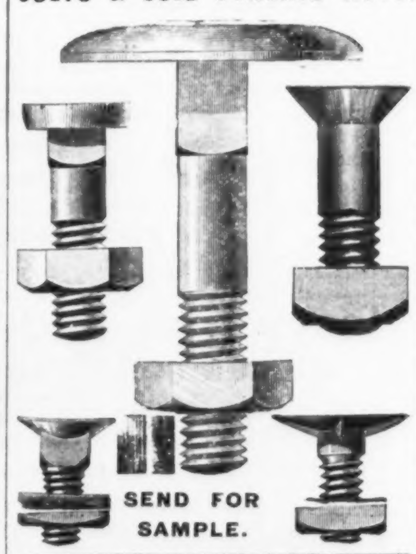

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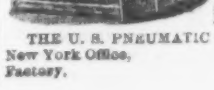

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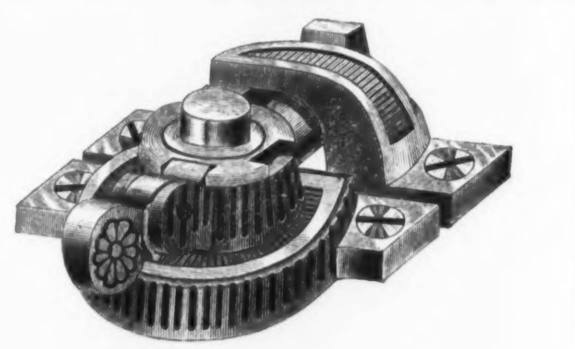

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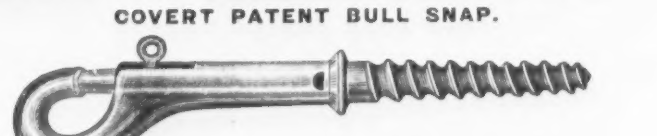
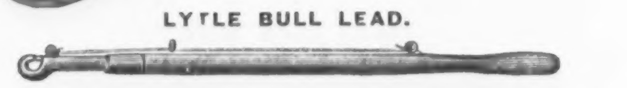


LYTLE BULL LEAD.



Covert's Celebrated Harness Snaps, Swivel Snaps, Open Eye Bit and Chain Snaps, Snap and Thimble for Horse and Cattle Ties. Rope Goods, consisting of Rope Halters, Horse and Cattle Ties, Halter Leads, Driving Reins, Weight Cords, Hitching Cords, Lariat Tethers and Picket Pins. Adjustable Soldering Irons.

— ALSO —

Leather Horse Ties, Breast Chains, Halter Chains, Martingale Chains, Rein Chains, Post Chains, Post Rods.

☞ For sale by all Leading Jobbers in General and Saddlery Hardware, and the same discounts given from the list to the trade as when purchased direct from the factory.

For Illustrated Catalogue and Price List address

COVERT MANUFACTURING CO., Sole Manufacturers,

West Troy, N. Y.

C. P. LELAND, Pres't. **THE CLEVELAND CRUCIBLE STEEL CO.,** E. M. GRANT, Gen'l Mgr.

MANUFACTURERS OF

TOOL, MACHINERY, **STEEL.** FILE AND SPRING.

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BOSTON, JAS. J. KELLY, 38 Kilby Street. | CHICAGO, CAMPBELL & LILL SUPPLY CO., 237 Lake Street.
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Crucible Cast Steel.

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MANUFACTURERS OF FINE

Clay Crucible Cast Steel.

Especially adapted for TAPS, DIES, DRILLS, TURNING TOOLS and other purposes where a **Superior and Even** Quality of Steel is required.

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For SLEDGE and other HAMMERS, FILES, PLIERS and other irregular and tapering shapes.

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MANUFACTURERS OF

Refined Spelter, Sheet Zinc and Sulphuric Acid.

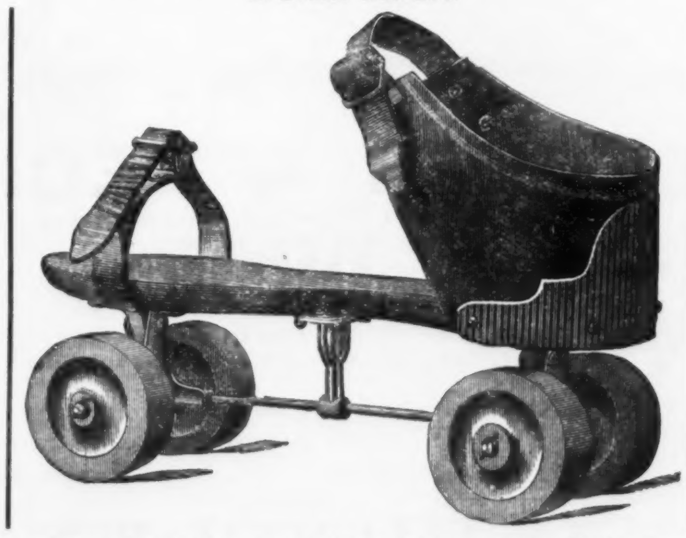
ALL ORDERS FILLED PROMPTLY.

PHILLIPS' AMERICAN ROLLER SKATE

BEATS THEM ALL.

IT IS LIGHT-RUNNING, SIMPLE IN CONSTRUCTION, DURABLE, AND COMPLETE IN EVERY RESPECT.

COMPARE OUR SKATE WITH OTHERS.



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The American Roller Skate has no rubber springs to wear out, no adjusting screws to work loose, or wire springs to break. It has larger wheels than any other skate, and for Fancy and **Rink Skating,** it is superior to all others. Liberal discount to the trade.

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Please mention "*The Iron Age.*") RICHMOND, IND.

The Spiral Flue Scraper,

FOR CLEANING BOILER TUBES.

The Best, Cheapest, Strongest, Simplest. Shears out the scale without cutting the metal of the tubes. Does not catch when pushed clear through. Can be adjusted to the wear, and wears sharp. It does not anneal and collapse when put in a hot boiler. Has four times the scraping surface of other Scrapers. Has no bolts or rivets. Send for descriptive circular. Manufactured by

JACKSON FLUE SCRAPER COMPANY,
Sole Proprietors and Manufacturers, JACKSON, MICH.

CHEMICALS AND APPARATUS

FOR THE ANALYSIS OF

ORES, IRON, STEEL, FUEL, FLUXES, FURNACE GASES, &c.,

Our Specialty. Being direct Importers and Manufacturers we can offer superior inducements.

EIMER & AMEND, NEW YORK. Nos. 205 to 211 Third Avenue. Eighteenth Street Station Elevated R. R.

Illustrated Catalogue Mailed on Application.

ESTABLISHED IN 1859.

THE IRONMONGER AND METAL TRADES ADVERTISER

PUBLISHED EVERY SATURDAY.

THE OLDEST AND CHIEF REPRESENTATIVE OF THE IRON, HARDWARE AND METAL TRADES.

OFFICE: 42a CANNON STREET, LONDON, E. C.

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SPECIAL FEATURES.

Notes of Novelties.—This is a department of the journal always watched with interest by the trade, as it contains an account, from week to week, of the novelties which manufacturers and inventors are introducing to the notice of the trade. These articles are freely illustrated.

Special Correspondents.—The *Ironmonger* has a deserved reputation for its special correspondence from all the principal Continental, British and manufacturing centers. The writers are gentlemen holding important positions in the districts with which they are connected, and possess facilities for acquiring information specially suited for the columns of the *Ironmonger*. ***The Week, Legal News, Trade Notes, Bankruptcies, Foreign Notes, Colonial Jottings, Merchants' Circulars, &c.***, are each departments of the journal containing a digest of all matters of direct interest to the Iron, Hardware and Metal Trades. In additon to the above, there is a carefully classified list of Patents, together with Editorial Notes, French, Belgian and other Special Correspondence.

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to the *Ironmonger and Metal Trades' Advertiser*, with which is sent every fourth week the Foreign Supplement (see below), may commence from any date, but are not received for less than a year complete. The rate is $5 per annum, inclusive of postage to any part of the world outside Great Britain. To every subscriber is presented, free, in the course of his year, a handsome and useful ***Ironmongers' Diary and Text Book,*** a work sold to non-subscribers at 75 cents.

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In the spring and autumn of each year there is published a special issue, the circulation of which is not less than **Twelve Thousand (12,000)** copies.

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This is an annual, **presented free to every Subscriber to the IRONMONGER AND METAL TRADES' ADVERTISER.** It contains a large number of ruled skeleton pages for diary and other entries, and in addition much useful reference information, varied from year to year. It is handsomely bound in cloth, gilt; and as copies are used in thousands of establishments for a whole year, it is obviously a medium of exceptional value for advertisements. Sold to non-subscribers at 75 cents.

THE FOREIGN SUPPLEMENT,

With which is incorporated The Universal Engineer,

is published every fourth week in connection with the extensive and world-wide circulation of the *Ironmonger* itself. The dates of its publication for the next twelve months will be as follows:

AUGUST 18, SEPTEMBER 15, OCTOBER 13, NOVEMBER 10, DECEMBER 8, 1883, JANUARY 5, FEBRUARY 2, MARCH 1 and 29, APRIL 26, MAY 24 and JUNE 21, 1884.

This supplement is published in

FOUR LEADING COMMERCIAL LANGUAGES

of the world, including English, and is sent to all the countries where they are spoken, thus placing the contents of the *Ironmonger* not only within reach, but in the native language of eighty millions of *German*, twenty-eight millions of *Italian*, and fifty-one millions of *Spanish* speaking people; or, in all, over two hundred millions of inhabitants in the principal nations where the best purchasers of manufactured goods are to be found.

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	13 INSERTIONS, each net.	7 INSERTIONS, each net.	3 INSERTIONS, each net.		13 INSERTIONS, each net.	7 INSERTIONS, each net.	3 INSERTIONS, each net.
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Advertisers will do well to use Illustrations freely. Where economy of space is an object, a left page illustrated and described in one language can be suitably described in four or more languages on the opposite or right page without illustrating.

THE WHOLE FOREIGN HARDWARE TRADE,

so far as our experience of more than twenty years is concerned, will be covered by THE FOREIGN SUPPLEMENT at least twice a year. Thus a Price List or Advertisement inserted in the *Ironmonger* and FOREIGN SUPPLEMENT is a strikingly powerful and most efficient way of publicity, not to be compared with any of the other ordinary channels of communication.

"Something New. Just Out."

RICHARD PATRICK, President. JOHN H. PATRICK, Sec. and Treas.

AMERICAN TOOL COMPANY,

116 CHAMBERS STREET, NEW YORK,

are now Manufacturing a Fine Line of

Housekeepers' Tool Chests,

FITTED UP COMPLETE WITH USEFUL TOOLS.

ALSO MACHINISTS' EMPTY TOOL CHESTS.

Also a full line of all the other styles of Tool Chests manufactured by them. Our New Illustrated Catalogue for Fall Season of 1883 will be issued about August 15th, and will be furnished on application, with prices. Every dealer in Hardware, Machinists' and Railway Supplies should keep a stock of these goods on hand at all times to supply the constant and increasing demand. We are the only company in the United States who make a business of manufacturing Tool Chests exclusively.

EMERY AND CORUNDUM WHEELS.

Can be run in **WATER, OIL** or **ACID** as well as **DRY.**

Polishes and Machinists' Supplies.
RUB STONES, EMERY WHEEL MACHINERY
And DIAMOND TOOLS.
CIRCULARS AND PRICE LISTS.

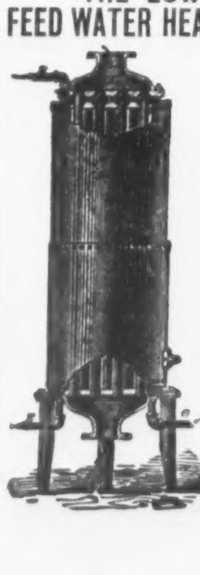
ADDRESS

VITRIFIED WHEEL COMPANY,

WESTFIELD MASS., U. S. A.

THE LOWE PATENT

FEED WATER HEATER & PURIFIER,



FOR

Heating and Purifying Water for Steam Boilers.

Patented July 12 1877

Has Straight Tubes.

SIMPLICITY, RELIABILITY and EFFICIENCY

At Less Cost

Than any Other.

Write for prices and further information to the manufacturers,

Lowe & Watson,

BRIDGEPORT, CONN.

PHILADELPHIA.

Corrected Weekly by Lloyd, Supplee & Walton.)

Terms, 30 days. For 60 or 90 days, interest added at 10¼ per cent. per annum.

Anvils.
Peter Wrights, ⅌ ℔ ... 11 @ 11¼c
Over 200 lbs ... 11½c
Trenton ... 10½
Eagle Anvils, American, 10c ... dis 20 %

Apple Parers.
Globe Apple Pearers ... $5.50 net
Penn Apple Parers ... $5.50 net
Lots of 10 to 25 dozen special prices

Axes.
Hunt's Kentucky and Yankee, per doz ... $8.50 @ 9.00
Robert Maun ... $8.00 @ 8.50
Richland Chief ... " ... $7.50 @ 8.00
Beveled Axes ... " ... add 50c net
Double Bit Axes ... net " ... $14.50 @ 15.50

Augers and Auger Bits.—New List January 7, 1880. ... dis 55@60 %
Bates' Nut Augers ... dis 40&10 %
Cook's Augers ... dis 15 %
Watrous' Ship Augers ... dis 40 %
Benjamin Pierce Auger Bits ... dis 55@60 %
Griswold Auger Bits ... dis 40&10 %
Cook's " ... dis 40&10 %
Jennings' " ... dis 10, 10&10 %
Bonney's Pat. Hol. Augers, list $48 ⅌ doz ... dis 25&10 %
Stearns' Pat. Hol. Augers, list $48 ⅌ doz ... dis 20&10 %

Balances.
Light and Common ... dis 33⅓ %

Bells.
Bevin Bros. Mfg. Co. Light Hand Bells ... dis 70&10 %
Swiss Pattern Hand Bells ... 60 %
Connell's Door Bells ... dis 15&10
Gt. Western & Kentucky Cow new list ... dis 60

Boring Machines
Upright, without Augers ... List 5.50 } dis 45@50 %
Angular, without Augers ... " 6.75 }

Bolts.—Eastern Carriage Bolts ... dis 80&70 %
Philadelphia " ... new list dis 70&10 %
Stanley, Wrought Shutter ... dis 50&10 %

Braces.—Barber's ... dis 40&5 %
Backus ... dis 50 %
Spofford ... dis 50&5 %
American Ball ... dis 55 %

Butts.—Cast Fast Joint, Narrow ... dis 40&10&10 %
" " Broad ... dis 40&10&10 %
Cast Loose Joint, Narrow ... dis 60&10 %
" " Broad ... dis 60&10 %
" Acorn. Loose Pin ... dis 60&10 %
" " Jap'd ... dis 60&10 %
" Maver's Loose Joint ... dis 60&10 %
Wrought Loose Pin ... dis 55&10 %
" Table Hinges and Back Flaps ... dis 50&10 %
" Narrow. Fast ... dis 50&10 %
" Loose Joint ... dis 55&10 %

Blind Butts.
Parker ... dis 70&2 %
Clark ... dis 70&2 %
Shepard ... dis 70 %
Lull & Porter ... dis 75&10 %
Huffer's ... dis 50 %

Chains.—German Halter and Coil. list December 31 1881 ... dis 50@55 %
Galvanized Pump ... ⅌ ℔ 9½c net
Best Proof Coil Chain—English.

⅌ ℔ ...	12	8¼	7¼	6¼	6	5¾	gold.
	3-16	¼	5-16	⅜	7-16	½	in.

Chisels.—Socket Framing ... dis 70&10 %
Socket Firmer ... dis 70&10 %
Butcher's ... $5.00@$5.25 to £ gold

Casters.—Bed (new list July 1, 1880,) ... dis 45@50 %
Plate ... dis 45@50 %

Coffee Mills.—Box and Side, new list Jan. 1, 1880 ... dis 50 %
Enterprise ... dis 20&10 %

Cutlery.—Walden Pocket ... new list net
Penna. Knife Co ... new list net
Landers, Frary & Clark, J. Russell & Co., Lamson & Goodnow Mfg. Co. and Meriden Cutlery Co., Manufacturers' prices net.

Drawing Knives.
Hart Mfg. Co.'s ... dis 70 %
Adjustable Handle ... dis 20 %

Fry Pans.
Tinned ... dis 45 %

⅌ doz.	$3.50	4.00	4.50	5.00	5.50	6.50	7.50	9.00	10.00
No. ...	0	1	2	3	4	5	6		8

Burnished ... dis 60, 10 & 5 %

⅌ doz.	$3.00	3.75	4.25	4.75	5.25	6.00	7.00	8.00	9.00
No. ...	0	1	2	3	4	5	6	7	8

Files.
Nicholson ... dis 40 %
Disston ... dis 40 %
Butcher ...

Fluting Machines.
Eagle—3½ in. roll ... each, $2.15 } dis 35 %
" —4½ in. roll ... " 2.85 }
Crown—4½ in. roll ... " 3.50 }
" —6 in. roll ... " 4.00 } dis 35 %
" —8 in. roll ... " 6.50 }
Geneva Fluter ... dis 25 %
Favorite com Fluter & Sad Iron ... ⅌ doz $10.50 net

Hammers.
Yerkes & Plumb's, new list ... dis 30 %
Maydole Hammers ... dis 15 %
Howell A. E. Nail Hammers ... per doz. net $3.75

Handles.
Disston Loop Handles Cross-cut ... 43c pair net
Boynton Loop Handles Crosscut ... 43c pair net

Hatchets.
Yerkes & Plumb, new list ... dis 30 %
Hunt ... dis 25 %

Hinges.
Strap and T ... dis 60&10&2 %

Horse Nails.

	Nos. 5	6	7	8	9	10	
Globe ...	24	21	19	18	17	16	dis 12½ %
Vulcan ...	26	23	21	20	19	18	dis 12½ %
Ausable ...	30	27	25	24	23	22	dis 40&10 %
" Pol'ed and P't'd & Blued & P't'd ...	31	28	26	25	24	23	dis 40&10 %
Clinton ...	25	21	20	19	18		dis 40&10 %
" Polished & Pointed ...	24	22	21	20	19		dis 70&10 %
Saranac ...	26	23	21	20	19	18	dis 25 %

Hay and Straw Knives.
Lightning ... per doz. net $18.00
Electric ... " " 18.00
Wadsworth ... " " 10.50
Walton Straw Knives ... " " 17.00

Locks and Knobs.
Branford ... new list dis 50&2 % cash
Gaylord Cabinet ... dis 4 %
American Padlocks ... dis 30, 10&2 % cash
Scandinavian Padlocks ... dis 50 %

⅌ doz.	$5.00	5.50	6.50	7.50	8.40	10.00	12.50	dis 60 %
No. ...	57	58	59	60	61	62	63	
⅌ doz. ...	$18.00		26.00		33.00			dis 60 %
No. ...	64		65		66			

Lanterns.
Buckeye ... Large list net; small list net
Tubular ... No. 0, $7.50; No. 1, $9.00 ⅌ doz net
Guards, 40 cents extra.

Lawn Mowers.—Pennsylvania ... } new list
Philadelphia ... } dis 30 %
Excelsior ... }

Lawn and Garden Pumps.
Holland Patent ... List $5.00 dis 10 %

Mattocks.
Long and Short Cutter ... new list ... 50 %
Pennsylvania Pattern ... dis 50 %

Molasses Gates.
Enterprise Mfg Co.'s Measuring Faucets ... dis 20&10 %
Stebbins' Gates ... dis 7 - 10 %
Lincoln's " ... dis 60&10 %
Landers, Frary & Clark's Petroleum ... dis 20&10 %
Brass Liquor Cocks, new list Jan. 1 1880 ... dis 55 %
Cork Lined " ... dis 70 %

Meat Cutters.
Dixon's ... dis 25&5 %
Woodruff ... dis 25&5 %
Stowe ... dis 25&5 %
Hale's ... new list, dis 50, 10&2 cash
American ... dis 20&10 %
Stuffers ... dis 25&5 %
Enterprise Stuffers ... dis 25&10 %

Planes.—Sandusky Tool Co ... dis 20 %
Ocontz ... dis 25 %
Ohio & Auburn ... dis 20 %
Bailey (S. R. & L. Co.) ... dis 20&10 %

Plane Irons.—Ohio Tool Co ... dis 20&10 %
Butcher's ... $5.00@5.25 to £

Plumbs and Levels.
Stanley's Adjustable ... dis 65&10 %
" Non-Adjustable ... dis 65&10 %

Picks.—New list ... 50 %

Razor Strops.
Lamont Combination ... per doz. $4.00
" " ... 1 gross lots $42.00
Imitation Emerson ... per doz. 2.00

Rules.—Stanley Boxwood ... dis 70 & 10 %
Stanley Ivory ... dis 55 %

Steelyards.—Hart's Pattern ... dis 40&10 %

⅌ doz. ...	$14.50	17.75	21.00	26.50	31.00	35.50
Lbs ...	50	100	150	200	250	300

American Pattern ... dis 40&10 %

⅌ doz. ...	$8.00	10.25	13.75	15.60	10.75	19.50
Lbs ...	50	100	150	200	250	300

Squares.
Steel and Iron ... dis 50; full case. dis 50&10&2 for cash
Try Squares, Stanley ... dis 50&10 %
Disston's Try Squares ... dis 40 %

Scythes.—Golden Clipper, Damascus Blade, Boxed and Sharpened ... ⅌ doz $9.00 }
Clipper No. 10, Bronzed Blade, Boxed and Sharpened ... ⅌ doz $8.50 } 30
Clipper No. 5, Painted Red, Boxed and Sharpened ... ⅌ doz $8.00 }

Saws.—Disston's Hand, Panel and Rip ... dis 20 %
Disston's Circular ... dis 40 %
Cross-Cut No. 2, Plain Tooth ... dis 40 %
" Patent Tooth ... dis 45 %
" Champion Tooth ... dis 40 %
Boynton's Lightning Cross Cut, new list ... dis 40 %
" Lightning Buck Saws, cross bar ... dis 40 %

Shovels and Spades.
Oliver Ames & Sons, new list ... dis 15 %
Griffiths ... dis 50@50&5
Rowland ... dis 50@50&5

Sad Irons.—4 to 10 lbs ... ⅌ ℔ 3½c
Mrs. Potts' Patent ... dis 35 %

Stone.
Washita Extra ... ⅌ ℔ 23½
" No. 1 ... " 18c
" No. 2 ... " 16c
" Slips ... " 37c
" Axe ... " 13c net
Hindostan Oil Stone No. 1 ... ⅌ ℔ 6c }
" Axe Stone ... " 8c } dis 33⅓ %
Slips ... " 10c }

Screws.
Flat Head Iron, new list Dec. 27 ... dis 55 %
Flat Head Brass, new list Dec. 27 ... dis 55 %
Round Head Brass, new list Dec. 27 ... dis. 45 %
Round Head Iron, new list Dec. 27 ... dis. 50 %

Spoons.
Plated ... dis 40&10&5 %
German Silver ... dis 30&10&5 %
Britannia, Boardman's ... dis 60&10 %
" Parker's ... dis 60&10 %
Tinned ... dis 10 %

Springs.—Torrey ... dis 50 %
Gem No. 3 small Jap'd ... $2.00 } dis 50 & 10 %
" No. 2 medium Jap'd ... 2.75 }
Coil No. 10, per gross net ... $6.00
Other Standard Springs ... dis 50&10 %
Warner Door Springs, per doz. net ... 1.75
Standard Spring Hinges—
Single No. 0, per doz. net ... 1.25
" No. 1, " " ... 1.80
Other Standard Spring Hinges ... dis 25&10 %

Stocks and Dies. ... dis 10&5 %

Stove Polish.—Gem ... ⅌ gross, $4.50, dis 5 %
Dixon ... " 6.00, dis 10 %
Fire Fly ... $3.00 gross net

Tacks. ... dis 30&10 %
Shoe Nails—4-8, and over 8c ... } 10 %
" " 3½-8, and under 9c ... }
Double Pointed Tacks ... dis 40&5 %

Traps.
Genuine Oneida—Newhouse ... dis 35 %
Im. Oneida—Newhouse list first qual dis 55&5 @ 60 %

Vises.—Solid Box Trenton new list ... dis 45 %

Wrenches.—Agricultural ... dis 70 %
Coes' Genuine ... dis. 50&3 %
Coes' Mechanics' ... dis. 50&10&3 %
" " Mall. Bar ... dis 75 %

Wire.
Bright or Ann'd, No. 0 to 18 ... dis 57½@60 %
" " No 19 to 26 ... dis 60@65 %
" " No. 27 to 36 ... dis 62½@70 %
Coppered, 0 to 18 ... dis 50@50½ %
Tinned Broom Wire ... dis 57½@60 %
Galvanized Barb Wire ... 7¼c
Painted Barb Wire ... 6¼c
Galvanized No. 7 to 18 ... Market List, dis 15@17½ %

Wringers.
Peerless No. 2½ ... $42.00
" No. 2 ... 45.00
Universal No. 2½ ... 42.00
" No. 2 ... 45.00
Novelty No. 2, for common tubs ... 42.00
" No. 3, " " ... 48.00
Excelsior E, for stationary tubs ... 51.00
" F " " ... 57.00

In lots of 1 doz. $3.00 doz. dis. from above price.

PITTSBURGH.

Merchant Iron.

Terms.—Note or acceptance at 60 days, with current rate of exchange on New York, or a discount of 2 per cent. for cash, if remitted within 10 days from date of invoice.

For fluctuations and discounts on card rates see weekly Pittsburgh Trade Report.

The following are card rates.

Flat Bar.
1½ to 4 by ⅜ to 1 inch ... 2.5c
4¼ to 6 by ⅜ to 1 " ... 2.6c
1⅛ to 6 by 1⅛ to 1¼ " ... 2.9c
1¼ and 1⅛ by ⅜ to ¾ " ... 2.6c
1 and 1⅛ by ⅜ to ¾ " ... 2.7c
⅝, ¾ and ⅞ by ⅜ to ⅝ inch ... 2.9c

Rounds and Squares.

1 to 1⅝ ...	2.5c	⅝ to 9-16 ...	2.7c
2 to 2⅝ ...	2.7c	½ to 7-16 ...	2.9c
2¾ to 3¼ ...	3.0c	⅜ ...	3.1c
3⅜ to 4 ...	3.5c	5-16 ...	3.3c
4¼ to 5 ...	4.0c	¼ ...	3.5c
⅝ to ⅞ ...	2.0c	3-16 ...	5.5c

Oval Iron.

¾ to 1½ ...	2.9c	½ ...	3.3c
⅝ to ¾ ...	3.1c	⅜ ...	3.7c

Half Oval and Half Round.

¾ to 1¼ inch ...	3.2c	½ inch ...	4.0c
⅝ to ¾ " ...	3.7c	⅜ " ...	5.5c

Horse Shoe.
⅝ to 1¼ by 5-16 to ¾ inch ... 3.5c

Wagon Box Iron.
¾ Inch Nos. 13 and 14 ... 3.7c
⅜ " " 11 and 12 ... 3.5c
⅜ " " 13 and 14 ... 4.0c
⅜ " " 11 and 12 ... 3.8c
⅝ " " 13 and 14 ... 4.4c
⅝ " " 11 and 12 ... 4.1c

Heavy Bands.
3½ to 6 by ¼ and 5-16 inch ... 2.7c
1⅛ to 3¼ by ¼ and 5-16 " ... 2.7c
1 to 1⅛ by ¼ and 5-16 " ... 2.8c
¾ to ⅞ by ¼ and 5-16 " ... 3.0c
⅝ and ⅝ by ¼ and 5-16 " ... 3.5c

Light Bands.
1½ to 6 by ⅛ to 3-16 ... 3.0c
1½ to 6 by Nos. 11 and 12 ... 3.1c
1 to 1⅜ by ⅛ to 3-16 ... 3.1c
1 to 1⅜ by Nos. 11 and 12 ... 3.2c
¾ and 13-16 by ⅛ to 3-16 ... 3.4c
¾ and 13-16 by Nos. 11 and 12 ... 3.5c
⅝ and 11-16 by ⅛ to 3-16 ... 3.7c
⅝ and 11-16 by Nos. 11 and 12 ... 3.8c
⅝ and 9-16 by ⅛ to 3-16 ... 4.0c
⅝ and 9-16 by Nos. 11 and 12 ... 4.1c
½ inch by ⅛ and 3-16 ... 4.3c
½ inch by Nos 11 and 12 ... 4.4c

Hoop Iron.
1⅝ to 4, Nos. 13, 14 and 15 ... 3.3c
1⅜ to 2, Nos. 16, 17 and 18 ... 3.4c
1¼ to 2, No. 19 ... 3.5c
1¼ to 2, No. 20 ... 3.6c
1⅛ to 2, No. 21 ... 3.7c
1⅛ to 2, No. 22 ... 3.8c
15-16, 1, and 1⅛, Nos. 13, 14 and 15 ... 3.5c
15-16, 1, and 1⅛, Nos. 16, 17 and 18 ... 3.6c
15-16, 1, and 1⅛, Nos. 19 and 20 ... 3.7c
15-16, 1, and 1⅛, No. 21 ... 3.8c
15-16, 1, and 1⅛, No. 22 ... 3.9c
⅞, Nos. 13, 14 and 15 ... 3.7c
⅞, Nos. 16, 17 and 18 ... 3.8c
⅞, Nos. 19 and 20 ... 3.9c
⅞, No. 21 ... 4.0c
⅞, No. 22 ... 4.1c
14-16 Nos. 13, 14 and 15 ... 3.9c
13-16, Nos. 16, 17 and 18 ... 4.0c
13-16, Nos. 19 and 20 ... 4.1c
13-16, No 21 ... 4.2c
13-16, No. 22 ... 4.3c
¾, Nos. 13, 14 and 15 ... 4.0c
¾, Nos. 16, 17 and 18 ... 4.1c
¾, Nos. 19 and 20 ... 4.2c
¾, No. 21 ... 4.3c
¾, No. 22 ... 4.4c
11-16, Nos. 13, 14 and 15 ... 4.2c
11-16, Nos. 16, 17 and 18 ... 4.3c
11-16, Nos. 19 and 20 ... 4.4c
11-16, No. 21 ... 4.5c
11-16, No. 22 ... 4.6c
⅝, Nos. 13, 14 and 15 ... 4.4c
⅝, Nos. 16, 17 and 18 ... 4.5c
⅝, Nos. 19 and 20 ... 4.6c
⅝, No. 21 ... 4.7c
⅝, No. 22 ... 4.8c
⅝, No. 23 ... 4.9c
9-16, Nos. 13, 14 and 15 ... 4.6c
9-16, Nos. 16, 17 and 18 ... 4.7c
9-16, Nos. 19 and 20 ... 4.8c
9-16, No. 21 ... 4.9c
9-16, No. 22 ... 5.0c
9-16, No. 23 ... 5.1c
½ inch, Nos. 13, 14 and 15 ... 4.8c
½ " Nos. 16, 17 and 18 ... 4.9c
½ " Nos. 19 and 20 ... 5.1c
½ " No. 21 ... 5.2c
½ " No. 22 ... 5.3c
½ " No. 23 ... 5.4c

The prices under Hoop Iron do not apply to Cotton Ties.

1-10c per lb. extra will be charged for each gauge lighter than the lightest indicated.

1-10c per lb. extra will be charged for cutting Hoops to specified lengths.

Barrel Hoops.
1⅛ to 2 in., cut to length.
9 to 11 lbs, per set of 6 hoops ... 3.5c
8 lbs. and less than 9 lbs. per set of 6 hoops ... 3.6c
Less than lbs. per set of 6 hoops ... 3.8c

Extras for Cutting to Length all Preceding Iron.
All Iron, including Tire ... 1.10c

Tank Iron.
No. 9 and heavier ... 3.3c
Plow Slabs ... 3.5c
" Wings ... 3.8c

Sheet Iron.

	Common.	Charcoal.	Juniata.
No. 10 to 14 ...	3.5c	5.0c	6.5c
No. 15 to 17 ...	3.8c	5.3c	6.8c
No. 18 to 21 ...	4.1c	5.6c	7.1c
No. 22 to 24 ...	4.3c	5.8c	7.3c
No. 25 & 26 ...	4.5c	6.0c	7.5c
No. 27 ...	4.7c	6.2c	7.7c
No. 28 ...	5.1c	6.6c	8.1c

All sheets No. 18 and lighter, over 30 inches wide, not less than 2.10c extra.

Wood's Patent Planished Sheet.
1st quality (A) ... 10½c | 2d quality (B) ... 9 c

Galvanized C. H. B.—Charcoal Hammered Blooms.

Nos. 14 to 20 ...	12c	No. 27 ...	15c
Nos. 21 to 24 ...	13c	No. 28 ...	16c
Nos. 25 and 26 ...	14c	No. 29 ...	18c

45 @ 47½ % discount.

Coal Screen Iron.
1¼ by ⅜ by 5-16 ... 3.0c | 1 by ⅜ by 5-16 ... 3.5c

Angle Iron.
2½, 3, 3½ and 4 inch ... 3.3c
1½, 1¾, 2 and 2¼ inch ... 3.3c
1¼ inch ... 3.4c
1 " ... 3.6c
1½ by 1 inch, for Plow Handles ... 3.8c
1½ by ¾ " " ... 3.8c
1⅜ by ⅝ " " ... 3.9c

T Rail.

8 lbs. to the yard ...	2.9c	20 lbs. to the yard ...	2.8c
12 " " ...	2.8c	28 ...	2.8c
16 " " ...	2.8c	30 ...	2.8c

Splice Joints for 12, 16 and 20-lb. Rail, 40c each; 28 and 30 lb. Rail, 50c each; 40 lb., 60c each.
3½ by ⅜ and ½ Spikes for 20 and 28-lb. Rail ... 3¾c
2½ and 3 by ⅜ " " 12 and 16-lb. " ... 4c
2½ by 5-16 " " 8-lb. Rail ... 4½c

Flat Rails.—Punched and Countersunk.
1½ to 2 by ½ to ⅝ inch ... 3.0c
1⅛ by ⅜ and 7-16 inch ... 3.2c
1¼ by ⅜, 7-16 and ½ inch ... 3.5c

Juniata Nail Rods ... 6.5c
Norway " ... 8.0c
Guard Iron ⅝x⅝x⅝ and ⅞x⅝x⅝ ... 4.0c
" ⅝x⅝x9-16 and ⅞x⅝x⅜ ... 4.2c
Drag Bars ... 3.3c
Dropper Bars ... 3.6c
Cylinder and Landside Iron ... 3.2c
Plow Beam Iron ... 4.0c

Nails.
See Pittsburgh Trade Report.

Best Quality Refined Cast Steel.
Square, Flat, Octagon and Round.
⅜ to 2 inches, inclusive ... 10½c
1-16 and 2⅛ to 3 inches ... 11½c
¼ and 3⅛ to 4 " ... 12½c
7-32 and 4⅛ to 5 " ... 13½c
3-16 and 5⅛ to 6 " ... 16c
5-32 inch ... 21c
⅛ inch ... 30c
Oil Well Steel Forgings ... 20c

Machinery Steel.

	Crucible.	Bessemer & Open Hearth
Ordinary Sizes, ⅜ to 2 inch Round ...	6c	5c
5-16 and 2⅛ to 3 inches ...	7c	6c
¼ and 3⅛ to 6 " ...	8c	7c
7-32 inch ...	10c	8c
3-16 " ...	12c	10c

Square, Flat and Octagon, ½c extra throughout the list.
Cut to specified lengths, ½c extra.

Hammer Cast Steel.
Crucible Cast Steel ... 7c
Open Hearth Cast Steel ... 6c

Sheet Steel.—Crucible.

	Best.	2d Qual.	3d Qual.	Bessemer & Open Hearth.
To 21 gauge ...	12c	11c	9c	7c

1c. extra for each additional gauge.
Cut to multiples or specified lengths, ½c. extra.

Miscellaneous Cast Steel.
Auger and Auger Bit ... 7c
Axle Steel for carriages and wagons ... 7c
Frog Points and Plates ... 7c
" Side Bars ... 6c
Pick, plain (hammered) ... 8c
" and Mattock, beveled (rolled) ... 7c
Skate Steel ... 7c
Table Cutlery plain ... 9c
Table Cutlery, beveled ... 9½c
Pike and Cant Hook ... 8c
Coal and Granite Wedge ... 8c
Roller ... 8c
Spindle, subject to Machinery classification ... 8c
Trap Spring Steel ... 9c
Forged Crank Pins and Lathe Spindles ... 9c
Piston Rods, plain ... 7c
" forged to shapes ... 9c
Slide Bars, plain ... 8c
" forged to shapes ... 9c

Crucible, Open Hearth or Bessemer
Boiler, Fire-Box and Flue Sheets, not less than 3-16 thick ... 6c
Boiler, Fire-Box and Flue Sheets, not less than ⅛ thick ... 7c
Circulars and semi-circulars, when ordered separately ... 8c
Smoke Stack, to shape ... 7c
Locomotive Tank Steel ... 6c

File Cast Steel.
Square, Round, Half Round and Flat Bastard, 8-inch and over ... 8c
Mill Saw, 8-inch and over ... 8½c
Taper, 3½-inch and over ... 9½c
Horse and Shoe Rasp ... 8½c

Spring Cast Steel ... 6½c
Spira Taper, cut to lengths ... 7c

Tire Cast Steel.
1x½ and over ... 8½c
1x3-16, ¾x3-16 and ¾ ... 9c
1 and 13-16x⅛ and 5-32, ¾x3-16 and 5-32 ... 9½c
⅝ and ⅝x⅛ and 3-32 and 12 g ... 11c
Solid Safe Cast Steel ... 7½c
Three and Five Ply Cast Steel ... 10c

Agricultural Implement Cast Steel
Fork and Rake, Crucible ... 6c
Horse Rake Steel, cut to lengths, Crucible ... 7c
Hoe, Crucible ... 6c
Corn Stalk Cutter, beveled ... 7½c
Beveled Hoe and Shovel Steel in Bars ... 7c
Crucible Plow Steel in slabs ... 6c

Bessemer and Open Hearth.
Spring ... 4½c
" spiral and taper, cut to lengths ... 5½c
Tire, 1-10 thick and above ... 4½c
Toe Calk ... 4½c
Plow ... 4½c
Axle Billets ... 4c
Sleigh Shoe ... 4c
Cutter Shoe, cut to lengths and tapered ... 5½c
Scythe Back Steel ... 4c
Grain Drill Bars ... 6c
" Points ... 7c
Rolling Coulter Blanks, cut and punched ... 9½c
Thrasher Steel ... 4½c
" Teeth ... 5½c
Rolled Hammer Billets ... 4½c

Terms.—Four months: 2 per cent. discount for cash, if remitted within 10 days.

Rolls and Castings.
Furnace Floor and Straightening Plates ... 1¾c
Housings and Castings not otherwise specified ... 2¾c
Guide Plates ... 3¼c
Spindles and coupling boxes ... 2½c
Sand Rolls and Pinions, large size ... 3 c
" small size ... 3½c
Pipe Mill Castings ... 5 c
Rolling Mill Castings under 50 lbs ... 4 c
Spur and Bevel Wheels, large ... 4 c
" " small ... 4½c
Pulleys up to 30 inches ... 4½c
" over 30 inches ... 4 c
Engine Castings, light ... 4½c
" " heavy ... 4 c

Chilled Rolls.
6 to in. diam., to 20 in. long ... 4½c
8 to 15 in. " 8 to 40 in. " ... 4½c
25 to 24 in. " 15 to 72 in. " ... 4c
14 to 31 in. 72 to 108 in. " ... 4c

After Oct. 1, 1881, no discounts will be made at settlement as heretofore, prices quoted being net.

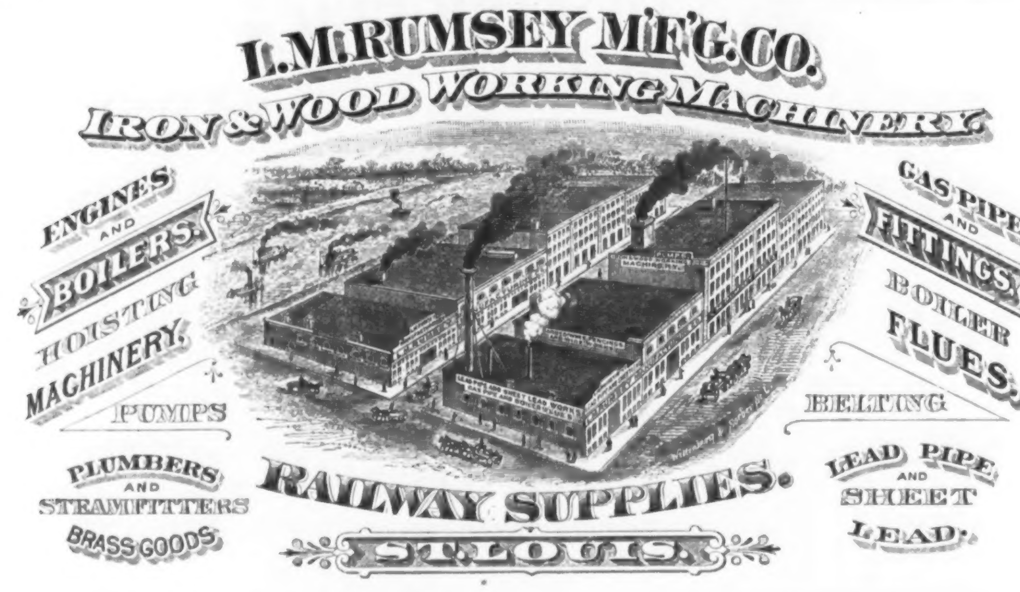
White and Red Lead.
Strictly Pure White Lead in Oil, in kegs, 6½c.; in 25 ℔ Tin Pails, ½c. ⅌ ℔ over keg price; 12½ ℔ Tin Pails, 1c ⅌ ℔ over keg price; assorted, 1 to 5 ℔ cans, 3c. per ℔ over keg price.
Dry White Lead in barrels ... 6¼c
Red Lead, very brilliant, in kegs, 6½c; in barrels 6¼c
Litharge (Potter's Lead) " 6½c; 6¼c
Freights equalized with all points where White Lead is made.
Terms: Note at sixty days, or if paid within 15 days from date of invoice a discount of 2½ per cent. will be allowed, but not otherwise.

Window Glass.
Discount, 70 % on Single Strength, 70 & 10 % on Double.

Single Strength. Size.	AA.	A.	B.	C.
6 x 8 to 10 x 15 ...	$8.25	$7.50	$7.00	$6.50
11 x 14 to 16 x 24 ...	9.25	8.50	8.00	7.25
18 x 22 to 20 x 30 ...	10.75	9.75	8.75	7.75
15 x 36 to 24 x 30 ...	12.25	10.75	9.00	8.50
26 x 28 to 24 x 36 ...	13.00	11.50	9.75	9.00
26 x 36 to 26 x 44 ...	14.50	13.25	10.75	9.50
26 x 46 to 30 x 50 ...	15.00	14.00	11.25	10.50
30 x 52 to 30 x 54 ...	16.00	14.50	12.00	
30 x 56 to 34 x 56 ...	17.25	15.50	13.50	
34 x 58 to 34 x 60 ...	18.25	17.25	15.00	
36 x 60 to 40 x 60 ...	20.75	18.75	17.25	
Double Strength.				
6 x 8 to 10 x 15 ...	13.75	11.75	10.75	10.00
11 x 14 to 16 x 24 ...	14.50	13.25	12.50	11.25
18 x 22 to 20 x 30 ...	17.25	15.75	14.00	
15 x 36 to 24 x 30 ...	19.75	17.25	14.50	
26 x 28 to 24 x 36 ...	21.00	18.50	15.75	
26 x 36 to 20 x 44 ...	23.25	21.25	17.25	
26 x 46 to 30 x 50 ...	24.00	22.50	18.00	
30 x 52 to 30 x 54 ...	25.75	23.25	19.25	
30 x 56 to 34 x 56 ...	27.75	25.00	21.75	
34 x 58 to 34 x 60 ...	29.25	27.75	24.00	
36 x 60 to 40 x 60 ...	33.25	30.00	27.75	

An additional 10 per cent. will be charged for all glass more than 40 inches wide. All sizes above 52 inches in length and not making more than 81 united inches, will be charged in the 84 united inches bracket.

Hubbard, Bakewell & Co.'s Goods.
Axes, Single Bit, Lippincott ... Per doz. $8.00
" " James & Co ... " 7.00
" Double Bit, Lippincott ... " 15.00
" " James & Co ... " 12.00
Drain Tools, list ... dis 20 %
Hoes, Planters' ... dis 55 %
" Scovill Pattern ... dis 55 %
" Handled, Square Eye, German ... dis 25 %
Handles, Cross Cut ... Per doz. $3.50
" Shovel, Bent, Bored, Riveted ... " 2.50
Saws, Circular ... dis 45 %
" Long ... dis 40 %
" Cross Cut, H. B. & Co., Champion, Per ft. net ... $0.35
" Cross Cut, Lippincott, Champion, Per ft. net ... .30
Shovels, list ... dis 20 %
Spades, " ... dis 20 %
Scoops, " ... dis 20 %



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47 Pearl Street, COR. FRANKLIN, *BOSTON, MASS.* JAMES H. WORK, Manager.

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Chamfered and Trimmed, Square and Hexagon

MACHINERY NUTS.

SQUARED AND TAPPED HEXAGON NUTS,

U. S. Government Standard Threads,

WARRANTED INTERCHANGEABLE.

Turn-Buckles, Clinch Rings, Bolt Ends, Chain Links Ship Chandlery Hardware.

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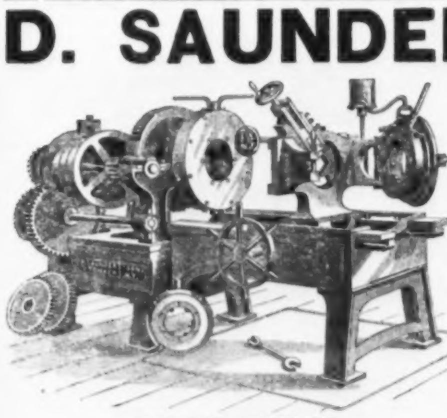

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Pipe Cutting and Threading Machines,

For Pipe Mill and Steam Fitters' Use.

Tapping Machines,

For Steam Fitting. Also

STEAM AND GAS FITTERS' HAND TOOLS,

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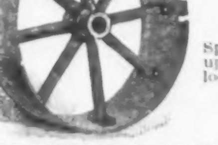
The Medart Patent Wrought Rim Pulley



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We make Whole Pulleys from 9 inches to 96 inches diameter, and Split Pulleys from 12 inches to 72 inches diameter. All widths of face up to 32 inches crowning and up to 36 inches straight: also tight and loose and Double Arms.

Absolute Satisfaction Guaranteed.

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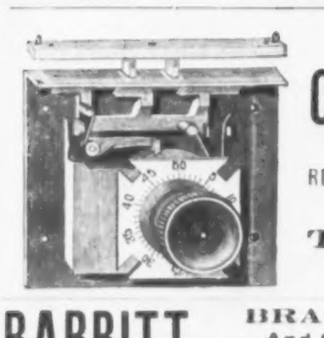
TAYLOR'S DUPLEX COMBINATION LOCKS.



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RETAIL FROM $1.50 TO $3.00. 2500 CHANGES.

FOR ALL PURPOSES.

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BABBITT METAL.

BRASS CASTINGS And Car Journal Brasses

Tinners' Solder, Stereotype Metal, Electrotype Metal.

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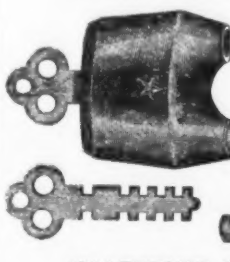
STAR LOCK WORKS.

ESTABLISHED 1836.

Trunk Locks, Pad Locks, Dead Latches, Door Springs, Trunk Stays, Keys, &c,

110 South 8th St., and Sansom, bet. 8th and 9th, PHILADELPHIA.



PATENTED Scand. Pad Locks With Flat Keys. Shackel secured to the Lock Box.

HILLEBRAND & WOLF.

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C-SPRING CART CO., RUSHVILLE, IND.

We are making a Road Cart that is strong, light, easy on the horse and rides as easy as a buggy. Easy to get in and out of. Cut shows No. 3, with seat swung back ready to enter. Write for catalogue and prices.

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Laflin & Rand Powder Co.,

No. 29 Murray Street, New York,

Manufacture and sell the following celebrated brands of Sporting Powder known everywhere as

ORANGE LIGHTNING, ORANGE DUCKING, ORANGE RIFLE,

more popular than any Powder now in use.

Blasting Powder and Electrical Blasting Apparatus.

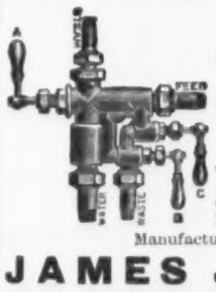
Military Powder on hand and made to order.

SAFETY FUSE, FRICTIONAL & PLATINUM FUSES.

Pamphlets showing sizes of grain sent free.

THE DUPLEX INJECTOR.

SIMPLE, RELIABLE AND DURABLE



The constantly increasing Sales of this Injector attests its Superiority as a Boiler Feeder.

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FOR STEEP OR FLAT ROOFS.

Applied by ordinary workmen at one-third the cost of tin. Circulars and samples free.

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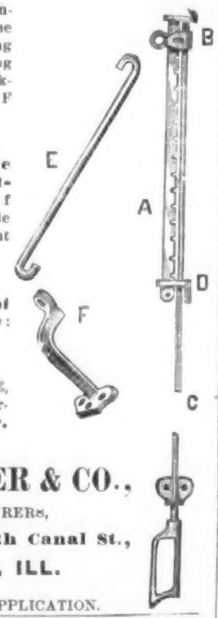
BARRETT, ARNOLD & KIMBALL, Western Agts. CHICAGO, ILL.

THE REIHER SELF-LOCKING IMPROVED TRANSOM LIFTER

A represents the Stationary Locking Bar; B the Self-Locking Adjusting Block; C the Operating Rod; D the Lower Bracket; E the Lifting Arm; F the Transom Bracket.



With this **Adjustable Locking Bar and Lifting Arm,** the opening of the transom can be made larger or smaller without the least inconvenience

Regular Sizes of Lifters for the Trade: ¼ in., 5-16 in. and ⅜ in.

Duplicates of Arm E, in different lengths, furnished with **first order.**

F. A. REIHER & CO., MANUFACTURERS, Nos. 11 & 13 South Canal St., CHICAGO, ILL.

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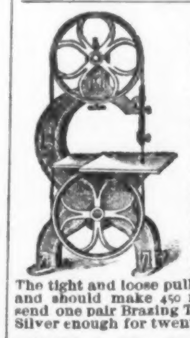


This Band Saw has a 30-inch wheel, covered with rubber. Saws 12 inches wide. Both wheels are adjustable, the upper one by a thumb-screw by which the saw can be run anywhere on the wheel, the lower one by three screws at either end of frame. Both wheels run in boxes of the best babbit metal The upper spindle is of steel, the lower of hammered iron. The slides are bolted on the frame, and the wear can be taken up. The upper end of screw has a rubber spring, which allows the saw to give at any sudden jar, and prevents the saw breaking. The frame is heavy and stiff, and weighs nearly 700 lbs. The tight and loose pulleys are 12 inches in diameter, and should make 450 revolutions per minute. We send one pair Brazing Tongs, Form, two Clamps, and Silver enough for twenty welds with every Saw.

SNIGGS & CO., 210 Terrace, Buffalo, N. Y.

Geo. A. Boynton, BROKER IN IRON 70 WALL ST, N.Y.

BOSTON.

Reported by Macomber, Bigelow & Dowse.

Anvil & Vise.—
No. 1, $5.25; 2, 4.25; 3, 3.50 each....dis 25 %

Augurs & Bitts.—Snell's Auger....dis 40&10 %
L'Hommedieu's Ship Auger....dis 15 %
Jenning's Bitts....dis 10&10&10 %
Cook's Bitts....dis 40&10 %
Shepardson's Double-Cut Bitts....dis 45 %
Shepardson's Double Gimlets....dis 40 %
Stearn's Extension Hollow Augers—
No. 2, ₩ doz., $48.00; No. 3, ₩ doz., $60.00 list..dis 20 %
Bonney's Extension Hollow Augers....₩ doz $36.00
Pierce's Bitts....dis 50 %
Griswold Bitts....dis 60 %

Axes.—Blue Jackets....₩ doz $9.00
Red Cross....₩ doz 8.00
Red Cross Handled....₩ doz 12.00
Dowse Handled Boys'....dis 33⅓ %

Ax Handles.—
Oak Extra, 31 in., No. A....₩ doz $2.50
Oak Extra, 34 in., No. A....₩ doz 2.50
Oak Extra, 31 in., No. B....₩ doz 2.00
Oak Extra, 34 in., No. B....₩ doz 2.00
Oak Extra, 31 or 34 in., No. C....₩ doz 1.40

Axle Clips....dis 50 %
Balances.—Chatillon's....dis 33⅓ %

Barn Door Rail.—
Cast Angle (for Anti-Friction Hangers)....₩ ft. 2c
Cast Half Round....₩ ft., ⅝, 3c; ⅞, 4c
Wrought Round....₩ ft., ½, 3c; ⅝, 4c ¾, 5c

Bells.—Connel's Crank Gong, reduced list..dis 15&10 %

Bird Cages.—
Japanned M. B. & D., reduced list, 1879....dis 40 %
Brass M. B. & D., reduced list 1879....dis 33⅓ %

Blind Fasts.—Lock Fasts....₩ C sets $6.00
No. 6 Fasts....₩ C sets 6.00
Veazie Fasts....₩ C sets 6.00
Shedd's....₩ C sets 7.00
Blind Hinges.—Mall, Hook, 3 holes....₩ C sets 7.00

Brad Awl Handles.—
Phœnix Adjustable....₩ doz $2.00

Bolts.—Norway Iron Carriage....dis 75 %
Common Iron Carriage....dis 80 & 10 %

Borax.—Refined....₩ ℔ 15c

Boring Machines.—
Eagle Upright each....$5.50 list } dis 50 %
Eagle Angle each....6.75 list }
Snell Augers....₩ set $2.45

Braces.—Barber's....dis 40&5 %
Spofford's....dis 40&5 %
Backus'....dis 50&5 %

Bracket Saws.—Holly Scroll Saw....each $2.25
Demas Lathe and Scroll Saw....each 6.50
Bracket Saws, extra quality, to No. 5....₩ gro 0.75
Steel Frame, with patterns....₩ doz 6.50
Lester....dis 20 %
New Rogers, all iron....dis 25 %

Bracket Saw Blades.—Griffith's pat....₩ gross 75c

Brackets.—
B. B. & M. Flower Pot, reduced list....dis 35&10 %
Bronzed Shelf, M. B. & D., new list....dis 50&10 %
Store Shelf....dis 40&10 %

Butts.—Union Fast Joint....45&10 %
Union Loose Joint....dis 45&10 %
Union Japanned Acorn....dis 55&10 %
Union Silvered Acorn....dis 55&10 %
Union Boston Finish....dis 70&10 %
Union Spiral Spring....dis 25&10 %
Wrought Brass....dis 65& 10%

Carriage Bolts.—Eagle Norway....dis 75 %
Common....dis 80&10 %

Carriage Jacks.—Climax No. 1....₩ doz $2 .00
Climax No. 1½....₩ doz 15.00
Climax No 2....₩ doz 13.5
Universal....dis 25 %
Universal No. 1....each. $2.00
Universal No. 2....each 3.00
Universal No. 3....each 6.00
Universal No. 4....each 6.00
Universal No. 5....each 6.50

Cartridges.—U. S. Cartridge Co....dis 70 %

Cards.—
Watson's make Horse & Curry....dis 10 % } Rev. List, Aug., 1883.
Watson's Cotton....dis 10 % }
Watson's Wool....dis 10 % }

Casters.—Bed and Table....dis 50 %

Chain.—Traces 6½, 10, 4, straight....₩ pair 50c
Traces 6½, 10, 4, twisted....₩ pair 55c
Traces 7, 12, 2, twisted....₩ pair 80c
Coil 3-16....₩ ℔ 10c
Coil ¼....₩ ℔ 7½c
Coil 5-16....₩ ℔ 6¾c
Coil ⅜....₩ ℔ 6½c
Coil 7-16....₩ ℔ c
Coil ½....₩ ℔ 5c

Chalk.—White, Carpenter's....₩ gross 60c
Red, Carpenter's....₩ gross 80c
Blue, Carpenter's....₩ gross $1.00

Chisels.—Hart, Bliven & Mead, Framing..dis 60&10&10%
Underhill, Framing....dis 30 %
Buck's Chisels....dis 20 %

Clothes Line.—
Galvanized Wire, 100 feet each....₩ doz $4.00

Coal Hods.—"Dover."—Galvanized, New List..dis 60%
Japanned, new list....dis 60 %

Cocks.—Brass. L. F. & Co....dis 50&10 %

Coffee Mills.—New List....dis 45 %

Copper Rivets....dis 50&10 %

Cordage.—Manila, usual trade dis 10....₩ ℔ 16c
Jute....₩ ℔ 8c

Cow Ties.....dis 40 %
No. 30, 3 ft. No. 6 Wire, with toggle....₩ doz $3.80
No. 35, 3 ft. No. 6 Wire, with snap....₩ doz 4.00
No. 40, 3½ feet No. 6 Wire, with toggle....₩ doz 4.30
No. 45, 3½ ft. No. 6 Wire, with snap....₩ doz 4.50
No. 50, 4 ft. No. 4 Wire, with toggle....₩ doz 4.75
No. 55, 4 ft. No. 4 Wire, with snap....₩ doz 5.00
No. 60, 4½ ft. No. 3 Wire, with toggle....₩ doz 5.60
No. 65, 4½ ft. No. 3 Wire, with snap....₩ doz 5.80

Crow Bars.—Cast Steel....₩ ℔ 7½c
Iron Steel-pointed....₩ ℔ 6c

Cutlery.—Pocket American Shear Co.'s....dis 40 %
Butcher Knives Wood's, Lap Bolster, Square Handle....dis 30 %
Steak Knives....dis 25 %
Lap Bolster, Oval Handle....dis 20 %
Sticking....dis 20 %
Skinning....dis 30 %
Butcher, Common Round Handle, Wood's....dis 20 %
Shoe Knives, Wood's....dis 20 %

Dividers.—Cook's....dis 25 %

Dog Collars.....dis 20 %

Door Springs.—Torrey's Rod....₩ doz $1.62
Imitation Torrey's Rod....₩ doz 1.40
Gem Coil, new list....dis 50 & 10 %
Crown....₩ doz 1.25
Warner's....₩ doz 2.00

Door Stops.—Thurston's....dis 50 %

Drawer Knobs.—Thurston's....dis 50 %

Drills.—Morse Bitt Stock....} dis 33⅓ %
Morse Straight Shank....}

Emery.—Wellington Mills....₩ ℔ 10c
Walpole Emery Mills....₩ ℔ 6c
Turkish in 10 ℔ cans....₩ ℔ 8c

Enameled Ware.—
Standard Mfg. Co. Kettles....dis 50 %
Standard Sauce Pans....dis 30 %

Felloe Plates.—Wrought....₩ ℔

Files.—American File Co....dis 40 %
Nicholson File Co....dis 40 %

Fluting Machines.—Knox list, $4.00....dis 25 %

Forks.—W. C. & Co. Manure....dis 50 %

Gimlet Bits.—
Genuine German, No. 125, 1-32 to 8-32, per doz $1.00
Pierce's....per doz .85

Glass Cutters.—Combination Glass Cutter and Knife Sharpener....₩ doz $1.00

Grub Hoes.—K. P. & Co.'s No. 2, $11.50 ₩ doz..dis 50 %

Hammers.—Maydole's....dis 15 %
Hartford Hammer Co....dis 20 %

Hangers & Rollers.—Anti-Friction....dis 50 %
Acme Rollers....dis 50 %
Climax....dis 50 %
Common Hangers....dis 50 %
Common Rollers....dis 50 %

Hand Screws.....dis 10 %

Hatchets.—C. F. Dowse new list....dis 33⅓ %
Underhill....dis 30 %

Hay Knives.—Lightning....₩ doz. $18.00, net
Fisher's Patent....₩ doz $14.00

Hinges.—Strap and T (new list)....dis 60 %
Providence Plate....₩ ℔ 5 %
Wrought Screw Hook....₩ ℔ 5 %

Hoes.—W. C. & Co.'s....dis 50 %

Hooks and Staples.—Brewers' (new list)....dis 60

Horse Nails.	No. 6	7	8	9	
National Finished....	.23	.21	.20	.19	....dis 20 %
Putnam Pointed....	.24	.22	.21	.20	....5 %
Bridgewater....	.21	.19	.18	.17	....list

Ice Cream Freezers.—Packer's, new list....dis 50 %

Knobs.—"Norwalk." New list....dis 50 %
Silver Glass....dis 50&10 %
Silver Glass Bell Pulls....dis 50&10 %

Lanterns.—Tubulars. No 0....₩ doz 7.50

Lawn Mowers.—The "Daisy."
12 in. cut....each, $8.00
14 in. cut....each 8.50
16 in. cut....each. 9.00
18 in. cut....each. 9.50

Lead.—Sheet....₩ ℔ 7½c
Pipe....₩ ℔ 6¾c

Locks.—Norwalk....dis 50 %
Eagle Cabinet....dis 25 %
Eagle Trunk....dis 15 %
W. Wilcox & Co., Padlocks....dis 30 %

Manure Forks.—W. C. & Co....dis 50 %

Mattocks.—
K. P. & Co., Long Cutter, $16.00 ₩ doz....dis 50 %
K. P. & Co., Short Cutter, $15.50 ₩ doz....dis 50 %
K. P. & Co., Pick Cutter, $16.00 ₩ doz....dis 50 %

Measuring Tapes.—Eddy's....dis 20 %

Meat Cutters.—Miles' Challenge....dis 30 %
Hale's, (new list)....dis 40 & 10 %
American....dis 25 %

Money Drawers.—Tucker'ar's Am....₩ doz $22.50

Mouse Traps.—Delusion....₩ doz 1.50
Novelty....₩ doz

Nails....₩ keg 3.10

Oilers.—Zinc and Tin....dis 60 %
Brass and Copper....dis 50 %

Ox Bows.—Extra finished and varnished....dis 10 %
1½ in., ₩ doz. pair...$7.00 | 2 in., ₩ doz. pair. $10.00
1¾ in., ₩ doz. pair... 9.00 | 2½ in., ₩ doz. pair. 12.00

Paper.—Tarred Sheathing....₩ ℔ 2¼c
Tarred Eagle Brand....₩ ℔ 2½c

Picks.—K. P. & Co., Adze Eye, 5 to 6 ℔ $12.00...dis 50 %
K. P. & Co., Adze Eye, 6 to 7 ℔ $13.00....dis 50 %

Planes.—
Fancy Planes....dis 15 %
Razee Planes....dis 20 %
N. Y. Tool Co....dis 25 %
English Iron....dis 20 %
Bailey's....dis 20&10 %

Plated Ware.—Rogers & Bro....dis 40&5 %

Pliers.—Vom Cleff & Co.'s....net list
Button's Wire Pliers....dis 33⅓ %

Plumb & Levels.—Stanley R. & L. Co...dis 65&10 %

Pocket Knives.—American Shear Co.'s....dis 40 %

Potato Diggers.—W. C. & Co., reduced list..dis 50 %

Pulleys.—Acme or Excelsior. 1¾ in....₩ doz 24c
Acme or Excelsior. 2 in....₩ doz 27c

Pulley Blocks.....dis 35 %

Pumps.—Union Manufacturing Co.
Iron Cistern....dis 40 %
Iron Pitcher Spout....dis 50 %
Copper....dis 30 %

Rivets.—Black (new list)....dis 40 %
Carriage in 10 ℔ papers (new list)....dis 40 %
Copper....dis 50&10 %

Razors.—Torrey's....dis 20 %

Rules.—Stanley, Boxwood....dis 70 &10 %
Stanley, Ivory....dis 55&10 %

Sad Irons.—Common....₩ ℔ 3½c
Laundry....₩ ℔ 6½c
Tailors' Geese....₩ ℔ 6 c
Enterprise, "Potts'"....dis 35 %

Sash Locks.—King & Hutchinson's, new list.dis 40 %

Sandpaper.—Baeder & Adamson....dis 35 %
M. B. & D....dis 35 %

Sash Weights.—Patent Eye....₩ ℔ 1½c

Saws.—Hand Saws, Disston's....dis 20 %
Wheeler & Clemson....dis 20 %
Cross-Cut Saws.
W. M. & Co., Common Tooth, No. 1....₩ foot 35c
W. M. & Co., Champion Tooth....₩ foot 35c
Disston's, Common Tooth....₩ foot 68c dis 40 %
Disston's Great American Tooth...₩ foot 68c dis 40 %
Boynton's Lightning Tooth....₩ foot 45c
M. B. & D., Hand Saws....dis 33⅓ %
W. M. & Co.'s Circular Saws....dis 35 %
Richardson Bros....dis 25 %

Saw Blades.—Disston....dis 20 %
W. M. & C....dis 10 %
Welch & Griffith, Extra....₩ doz $8.40
Welch & Griffith, No. 2....₩ doz 7.00

Scales.—Fairbanks....dis 20 %

Screws.
American Flat-Head Iron....new list, dis 55 & 5 %
American Flat-Head Brass....new list, dis 55 & 5 %
American Round-Head Brass....new list, dis 45 & 5 %
American Round-Head Iron....new list, dis 50 & 5 %
Grilley Round Head Nickel-Plated Common..dis 60 %

Scythes.—Clippers, in boxes....₩ doz $6.75

Shaves.—Kimball's....₩ inch 7½c
Watrous....dis 15 %

Shears.—American Shear Co., new list....dis 70 %

Shot.—Tatham's....₩ ℔ 7c

Shovels.—O. Ames, new list....dis 15 %
O. Ames, other brands, new list....dis 15 %
M. B. & D....dis 15 %

Sinks.—Magee Patent....dis 30 %

Snow Shovels.....$4.00

Skates.—Union....dis 25 %
Acme....dis 25 %
Imperial Club list No. 5, $3.75 ₩ pair list No. 7, $5.00 ₩ pair....dis 25%

Stocks and Dies.—King's....dis 10&5 %

Tacks.
Swedes Tinned....dis 30&10 %
Swedes Iron....dis 30 & 10 %
Gimp and Lace....dis 20 & 10 %
Copper Tacks....dis 30 & 10 %
All balances on list....dis 20&10 %

Traps.—Oneida, Genuine....dis 33⅓ %
Oneida, Imitation, H. & N....dis 60 %
Blake's....dis 40&10 %

Vises.—Simpson's Adjustable....dis 25&5 %
Howard Vise Co....dis 25 %
Prentiss'....dis 20 %

Weather Strips.—Packer's....₩ doz $4.50
Browne's Flexible Rubber....dis 30 %
In 25 feet boxes; No. 1, ½ in. wide, ₩ yard, 10c.; No. 2, ⅝ in., 15c.; No. 3, ¾ in., 20c.; No. 4, 1 in....25c
Black Walnut Spring Weather Strips....₩ doz $3.50

Window Springs....dis 33⅓ %
Babcock's No. 3....₩ gross $6.25
Babcock's No. 4....₩ gross 4.15

Wire Cloth.—"Clinton"....₩ ft

Wire Fence.—Scutt's Patent, Painted....₩ ℔ 6¼c
Scutt's Patent, Galvanized....₩ ℔ 7¼c

Wire Goods.—Gate Hooks and Eyes, &c., dis 70&10 %

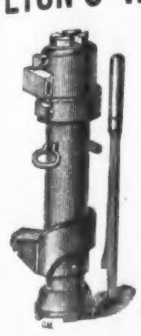
Wrenches.—A. G. Coe's....dis 50 %
Girard Mfg. Co....dis 50 & 10 %
Girard Agt....dis 60 & 10 %

Wringers.—
Novelty No 2 for Common Tubs....₩ doz 42.00
Novelty " 3 " " "....₩ doz 48.00
Excelsior E Stationary Tubs....₩ doz 51.00
Excelsior F " "....₩ doz 57.00
Excelsior A with Folding Bench....₩ doz 59.00
Excelsior B " " "....₩ doz 63.00
Novelty Set Tub. E....₩ doz 40.00
Keystone, Wood Frame No 1½....₩ doz 39.00
Keystone, Iron Frame No 2½....₩ doz 37.00

Zinc....₩ ℔ 6½c

Machinery, &c.

LYON'S HAND OR POWER PUNCHES AND SHEARS.



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HYDRAULIC JACKS,
To raise from 2 to 120 tons.
Hydraulic Presses for Special & General Use.
HYDRAULIC HAND & POWER PUMPS
with 1 to 6 plungers, to run hydraulic presses, with either uniform or changeable speed.
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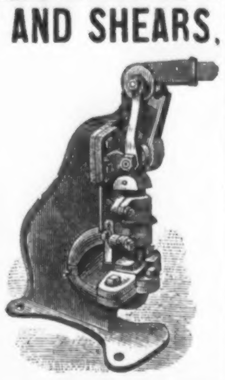
Send for circular of what you want.



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Send for circular to
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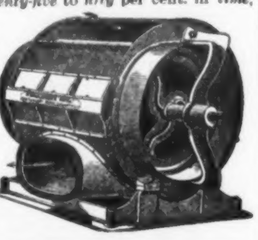
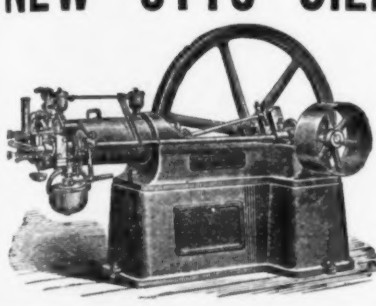
This Cupola has made a great revolution in melting Iron. It differs from all others in having a CONTINUOUS TUYERE, or in other words, the blast enters the fuel at all points. Above one ton capacity per hour, they are made *oval in form.* This brings the blast to the center of the furnace with the *least resistance* and *smallest* possible amount of power, and in combination with the continuous Tuyere causes complete diffusion of the air throughout the furnace, and uniform temperature, melting *ten* or *fifteen tons* an hour with the pressure of blast required to melt *two* or *three tons* in an ordinary Cupola. It also enables us to save very largely in *time* and *fuel*, the experience of our customers showing a gain of *twenty-five* to *fifty* per cent. in *time*, and *twenty-five* to *forty* per cent. *fuel* over the ordinary Cupola, and a BETTER QUALITY OF CASTING, especially in light work. This is due to the thorough diffusion of the air and more perfect combustion, extracting less carbon from the iron, making a softer and tougher casting.

We manufacture these Cupolas of any desired capacity, numbered from 1 to 20, inclusive, the numbers indicating the melting capacities in TONS PER HOUR—No. 1, one ton, ; No. 2, two tons ; No. 3, three tons per hour, and so on up to 15, or 20 tons. We have *improved* the *construction* of these Cupolas in every way, have increased their strength and durability, and sought to make them as convenient for working and repairs as our own and the experience of our customers could suggest.



NEW OTTO SILENT GAS ENGINE.



Working Without Boiler, Steam Coal, Ashes or Attendance.
Started Instantly by a Match, it gives Full Power Immediately.
When Stopped, all Expense Ceases.

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UNSURPASSED IN EVERY RESPECT for hoisting in warehouses, printing, ventilating, running small shops, &c.

1, 2, 4, 7, 10, 15 and 25 Horse-Power. Built by
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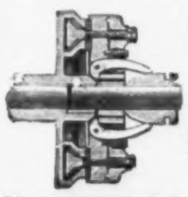

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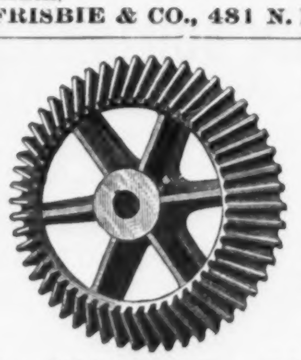

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No. 1½, on legs, swings 15¼ inches, 4 speeds. Price, **$75.**

No. 1 size, to set on bench, swings 13 inches, lever feed, 3 speeds, tight and loose pulleys. Price, **$35.**

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PUNCHING & SHEARING PRESSES.

Power, Foot or Hand
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All sizes, from $15 to $1200
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Machinery, &c.

WILLIAM SELLERS & CO.,
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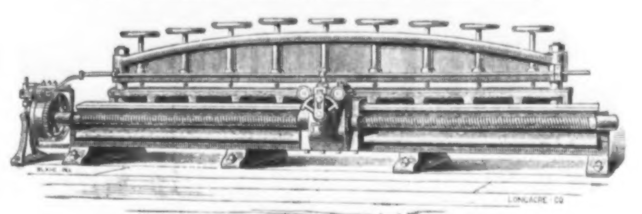

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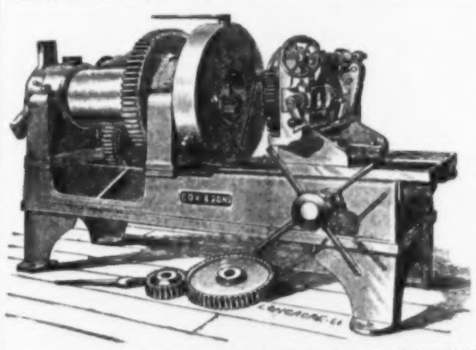

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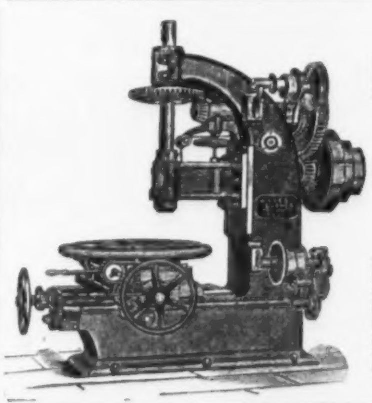

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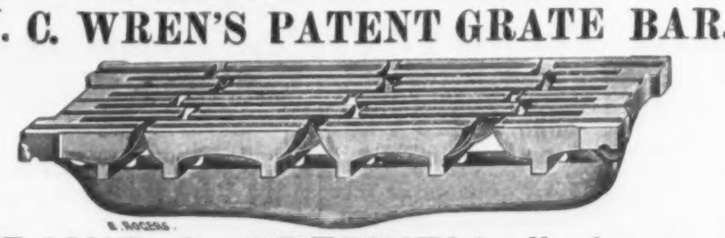

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The most durable Grate Bar on the market. Send for circular and price list.

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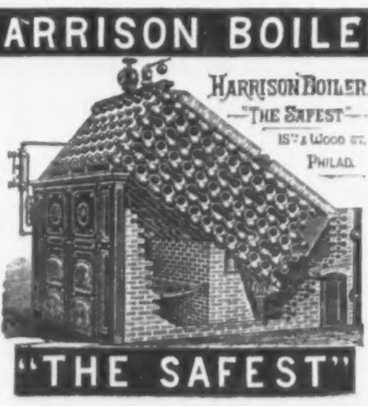

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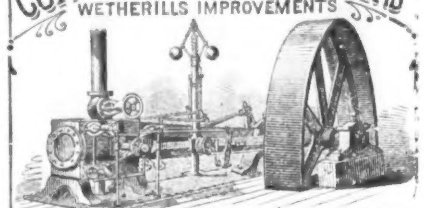

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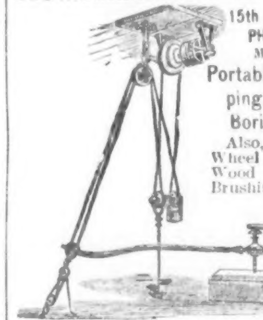

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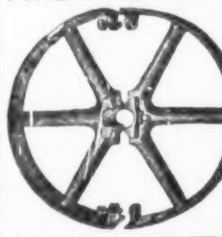

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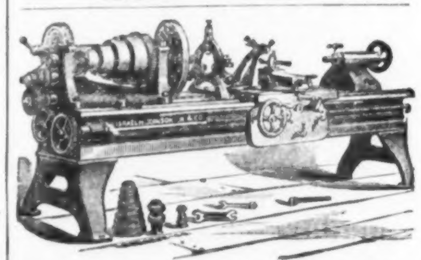

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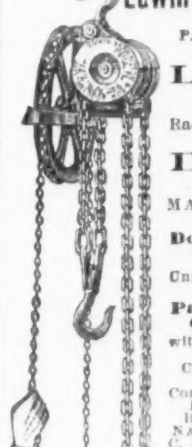

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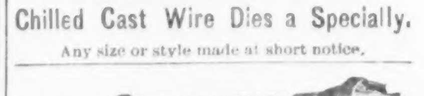

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